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Anatomy and Physiology.

Congenital Malformations of the Lower Jaw.

Dr. Alexander Ogston, of Aberdeen, gives, in the *Glasgow Medical Journal* for July, 1874, a complete *résumé* of the various congenital malformations to which the lower jaw is subject, and embodies, in a series of propositions, the conclusions which are warranted by our present knowledge of these deformities. These are as follows:—

1. Congenital deformities of the lower jaw are very rare.
2. Non-development of the lower jaw has been recorded in animals, but never in man.
3. Excessive development of the lower jaw appears to occur, though very rarely, and minutely recorded cases of it do not exist.
4. Preponderance of size of the lower jaw has been observed as the result of deficient development of some of the other facial bones.
5. Congenital smallness of the whole lower jaw occurs, and is generally associated with symmetrical deformities elsewhere.
6. Congenital smallness of the whole lower jaw may lead, in after life, to acquired deformities of the bones of the cranium and face.
7. Congenital unilateral smallness of the lower jaw has been found in one case with, and in two without, formation of the temporo-maxillary articulation of the same side, and coincided in all with asymmetry of the cranium.
8. Congenital dislocation of the lower jaw is said to have been met with in a single imperfectly recorded case.

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The Use of the Ligamentum Teres of Hip-joint.

At a late meeting of the Cambridge Philos. Soc., Mr. W. S. Savory, F.R.S., read (*Lancet*, May 23, 1874) a paper on the use of the ligamentum teres, which, though variously stated, he did not think had been correctly given. The statement that the ligament is vertical and tight when the person is erect had been challenged, but he was satisfied of its accuracy. It could be demonstrated by removing the bottom of the acetabulum with the trephine. The ligament is moderately tight when a person stands evenly upon both legs. It is tighter when the femur is slightly flexed as it more usually is. But when resting upon one leg, inasmuch as the pelvis is then raised on that side, which of course affects the ligament in the same way as adduction of the femur would do, then the ligament becomes extremely tense. In other words, it becomes tightest when the hip-joint has to sustain the greatest weight. When, therefore, the pelvis is borne down upon the femur, or when the femur is forced upwards—that is, when the pressure would be greatest between the upper part of the acetabulum and the opposite surface of the head of the femur—it is put directly on the stretch. More precisely, its great purpose is to prevent undue pressure between the upper portion of the acetabulum, just within the margin, and the corresponding part of the head of the femur. But for this ligament such undue pressure must inevitably occur. Suppose the ligamentum teres absent, and the person standing upright, owing to the obliquity of the acetabulum and the

head of the femur—of the axis of the joint—pressure between the two could not be equally, or nearly equally, diffused over their opposing surfaces, but it would be concentrated on a spot in the upper part of the socket through which a line drawn down the body, through the joint into the leg, would pass. When the thigh is straight, when the femur is in a line with the body, as when one stands upright, then is the ligamentum teres in the same line too, and, consequently, any force which drives the femur and pelvis together must tell at once upon the ligament, and be directly checked by it. Owing, therefore, to the shape and obliquity of the hip-joint, and the weight of the body, the ligamentum teres is necessary to prevent concentration of pressure at a particular point above it. The line through which the weight or force acts between the upper part of the acetabulum and the opposed surface of the head of the femur forms, with the line of weight or force which passes through the ligamentum teres, an obtuse angle; and the resultant of these forces is in a line which passes through the long axis of the head of the femur. When the person is erect the body partly hangs upon the ligamentum teres. This, he submitted, is the prime function of the ligamentum teres. Other purposes he did not deny, but would maintain that they only occasionally come into play, and are altogether subordinate to this one, which is especially called into action whenever the weight of the body is thrown upon one leg. He supported his view by reference to comparative anatomy, remarking that it is present when the acetabulum looks outward and the head of the femur is inclined inward; in other words, when the hip-joint is placed obliquely, so that there would otherwise be undue pressure at a particular part, and that it is absent in those animals in whom, although it is an instrument of progression, the posterior extremity does but little in supporting the weight of the body—*e. g.*, seals and the orang-outang. In conclusion, he called attention to a specimen in the museum of St. Bartholomew's Hospital in which the ligament is absent in both sides without any appearance of disease in the joints.

In discussions which followed, Professor Humphry, after expressing his obligation to Mr. Savory for affording the opportunity of discussing the subject with him, observed that the suggestions made with reference to the function of the ligament by Mr. Savory rested entirely upon the view that the ligament is tight in the erect posture. Professor Humphry was one of those who had challenged this view, of the accuracy of which Mr. Savory had expressed himself to be satisfied. He referred to his work "On the Human Skeleton, including the Joints," in which he had stated, as the result of careful observation, that the ligament is not tense, and cannot be rendered tense, in the erect posture. He had lately reconsidered the question and re-examined the specimens, or some of them, upon which his statement had been based, as well as other recent specimens made for the purpose, and he was convinced that it was correct. In the first place, the furrow in the head of the femur for the ligament is more or less oblong or pear-shaped, and is directed from above downwards and backwards with such obliquity that the ligament can lie in it, as it must do when it is in a state of tension, only in the semi-flexed position of the hip, the thigh being inclined from the vertical to an angle of about 45°. This can be seen in the dry bone, and still better in recent specimens in which the direction of the insertion of the fibres of the ligament corresponds with this view. Secondly, the trephine hole through the bottom of the acetabulum shows clearly that it is at about this angle only, and when the thigh is adducted, that the ligament is really tense. In the erect posture—and by the erect posture he meant when the thigh descends vertically from the pelvis, and the capsular ligament, more particularly the anterior part of it, is tight—neither adduction, nor rotation, nor any other movement will throw it into a state of full tension. If this is so, which the several specimens examined by the Professor proved to be the case, then it is quite certain that the body cannot hang upon the ligamentum teres when the person is erect, and the inferences based upon such a view fall to the ground. When resting upon one leg the body is tilted a little over to that side so as to throw the line of gravity more directly to that limb, the opposite side of the pelvis is slightly raised, the movement being equivalent to that of *ab*duction of the limb upon which the

weight is borne, and the ligamentum teres is not stretched, but is still more relaxed than in the erect posture. Even in the position of "stand at ease," when the weight is borne upon one limb and the opposite side of the pelvis is lowered, the other limb being placed upon the ground slightly flexed, the movement now being equivalent to that of *adduction* of the weight-bearing limb, though the ligamentum teres is less relaxed than in the former position, and is also less relaxed than in the erect posture, still it is not tight; and the body is slung, not upon the ligamentum teres, but upon the thick and strongly resisting upper portion of the anterior ligament of the hip. The use of the ligament the Professor believed to be, as he had stated in his work, to assist in bearing weight when the limb is placed upon the ground partially flexed and adducted, when the capsule of the hip is comparatively relaxed, and when, if the body be overweighted, dislocation is most likely to occur. In estimating, however, its value, even in this position, it must not be forgotten that several instances have occurred, some of which are noted in Meckel's *Archiv*, vi. 341, in which the ligament was wanting without its being known that any inconvenience had resulted from its absence. In dislocation, too, it must be severed, and it is highly improbable that it ever unites. It has been found, indeed, ununited. Still, the loss of it does not appear to be much felt. With regard to other mammals the ligament, as stated in the paper, is commonly absent when the lower limbs do not bear much weight, and also when they descend vertically from the pelvis. The Professor had, however, pointed out in the *Journal of Anatomy*, vol. iii. p. 312, that it is present in the rats. In most mammals in which it exists the dimple or furrow or angular depression which it occupies in the head of the femur is oblique, as in man, indicating its tension, in them as in him, to occur in the semi-flexed position of the joint. There were other points to which the professor took exception, but the important one was this of the position of the joint in which the tension of the ligament takes place.

Mr. Savory, in reply, remarked that he quite agreed with Professor Humphry that, if he were wrong as to the assumption of the ligament in the erect posture, his view fell to the ground, but he could not agree with the professor as to what really is the erect posture. The skeletons in museums are commonly articulated wrong, and give too much inclination to the pelvis, and he thought Professor Humphry was in error on this point, and that if the ligament be examined in the strictly erect posture it will be found tight, or more nearly so than the professor admitted. He added that by applying his view he had generally been able to judge from the direction of the limbs in well-articulated specimens of animals whether the ligament had been present during life or not. Still there were some exceptions, among the most notable of which was the difference between the ostrich and the emeu. In the former it is large, whereas in the emeu it is absent. Yet, though he had visited the latter animal in the Zoological Gardens, and examined its posture and movements with reference to this question, he had been unable to make out why it should thus differ from the ostrich.

Materia Medica and Therapeutics.

On Sulphide of Potassium, Sulphide of Sodium, and Sulphide of Calcium.

Dr. Sydney Ringer, Professor of Therapeutics in University College, London, calls attention to the value of sulphides, present in many natural waters, in abscesses, boils, and scrofulous sores. "The influence of the group," he says, "on the suppurative process, is easily made manifest. Thus when sulphide of potassium or calcium is administered, a thin, watery, unhealthy discharge becomes at first more abundant, afterwards diminishing, and throughout continues thicker and healthier, possessing indeed the characters of 'laud-

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able' pus. The condition of the sore improves correspondingly, and its healing is promoted.

"The sulphides appear often to arrest suppuration. Thus in inflammation threatening to end in suppuration they reduce the inflammation, and avert the formation of pus. This effect is manifested when sulphur compounds are employed locally in acne indurata; but further on I shall speak more in detail concerning their employment in this eruption. The influence of this group is still more conspicuous after the formation of pus. They then considerably hasten maturation, whilst at the same time they diminish and circumscribe the inflammation. They promote the passage of the pus to the surface and the evacuation of the abscess. Their efficacy may be frequently demonstrated in cases of the following kind. An unhealthy child, from six to twelve months old, suffers from a slight sore-throat, perhaps occurring in scarlet fever or measles. The sore-throat produces considerable enlargement of the glands behind the angle of the jaw. The swelling, of stony hardness, may be sufficiently large to interfere with swallowing and to push the head on one side. Suppuration takes place, but is very deep-seated, and for a long time there is neither redness of the skin nor fluctuation, and the pus very slowly makes its way to the surface, so that a fortnight, three weeks, or even a month may elapse before the abscess bursts, or is fit to be opened, when a deep hole is left, with considerable induration around it. The pain and constitutional disturbance are so great that the child sometimes dies; and even if this termination is averted, the deep discharging hole heals very slowly owing to the indurated and unhealthy state of the adjacent tissues. If a tenth of a grain of sulphide of calcium, mixed with a grain of sugar of milk, is given in such a case every hour or two hours, the results are most striking. The swelling becomes smaller, the pus reaches the surface in four or five days, and when it is evacuated leaves a benign wound which quickly heals. The effects of these remedies are equally conspicuous in mammary abscesses, although in rare instances they appear temporarily to increase the pain—a remark which seems sometimes to hold good with respect to boils. But as a rule the pain is speedily mitigated. Singular to say, I have found these remedies of much less use in forwarding the maturation and expulsion of pus in indolent buboes, but my experience of their use in buboes has been but small.

"It may be urged that it is difficult to imagine how these remedies can produce effects so different and apparently opposite as the dispersion of inflammation in one case and the expulsion of pus in another; but poultices and hot fomentations certainly possess the property both of subduing inflammation and of preventing suppuration, and in other cases of hastening considerably the evacuation of pus.

"In boils and carbuncles these remedies yield excellent results. A tenth of a grain of sulphide of calcium, given every two or three hours, generally prevents the formation of fresh boils, while it lessens the inflammation and reduces the area of the existing boils, and quickly liquefies the core, so that its separation is much more speedy, thus considerably curtailing the course of the boil. Where the skin is not yet broken, and the slow-separating core therefore not yet exposed, the sulphides often convert the boil into an abscess, so that on bursting pus is freely discharged and the wound at once heals. These remedies meanwhile improve the general health, removing that debility and malaise ordinarily so markedly associated with these eruptions. In some cases, however, as in the deep-seated boils and abscesses of diabetes, they are powerless. In carbuncles the sulphides will generally be found equally serviceable, melting, as it were, the core into healthy pus, and so quickly expelling the dead and otherwise slow-separating tissue. In abscesses and carbuncles it is useful to apply belladonna over the inflamed part to reduce inflammation and allay pain. The skin should be thickly smeared with equal parts of belladonna and glycerine, and over this a poultice applied, renewing the belladonna each time the poultice is changed. Poultices, however, being liable to bring out a fresh crop of boils, one of the following plans should be adopted: Smear belladonna ointment some distance round but not over the boil, and then apply a poultice, the greasy application thus protecting the neighbouring tissues. Or, still

better, apply a belladonna or opium plaster on leather, with a hole the size of the boil, around the swelling, and through the opening smear glycerine and belladonna, covering all with a small poultice. The leather plaster efficiently protects the surrounding skin and averts the production of fresh boils.

"I have thought it worth while to mention these useful plans of protecting the boil; but it is scarcely necessary to observe that whilst investigating the effects of sulphides I have employed them alone, or at most sometimes using only a poultice. The good effects of sulphides are conspicuous in certain scrofulous sores not uncommonly seen in children. Scrofulous children during the first few months are sometimes subject to indolent abscesses in the cellular tissue which run a very slow indolent course. At first only a small hard substance is observable, no larger than a pea, under the skin, which is of natural colour, and movable over it. The small substances next suppurate and gradually enlarge, the skin becomes adherent to them, and changes in colour to red or even violet, while sometimes in their neighbourhood the smaller vessels become enlarged and even varicose. They may grow to the size of a florin, and when matured feel soft and boggy. After a time a small circular opening appears, not larger perhaps than a pin's head, through which escapes a thin unhealthy pus. If deep-seated, as the buttocks, or in fat children, there may be very little or no discoloration of the skin. The chief noticeable character then is the small sharply-cut opening, as if a piece had been punched out. These formations follow one another, and may continue to distress the child for months or years. In mild cases a few only may form, whilst in severe cases there may be at one time ten or a dozen in different stages of development. When they heal they leave a white, sharply defined, but not deeply depressed scar. On the administration every hour or two of a tenth or twentieth of a grain of sulphide of calcium, the following effects occur: New formations seldom appear, although for months or years the child may have been infested with them. Many of the abscesses, especially in a very early stage of development, dry up and disperse, others generally speedily come forward and discharge their contents, the pus being laudable, instead of thin and unhealthy. The abscesses already in an open state improve, their pus becoming healthier, and the wound healing speedily.

"In some cases, in addition to these subcutaneous formations, the bones also become affected. The phalangeal bones of the hand are most frequently attacked, but not uncommonly the metacarpal, and more rarely the metatarsal. Where the phalangeal bones are affected, one or several of the fingers become nodose. For a long time the skin remains pale and freely movable, but after a time suppuration ensues, when the swelling increases, the skin becomes red and painful, and, after a time, slowly softens at one point, remaining boggy for a considerable time before the abscess opens naturally. Then generally a little bone separates, or in bad cases the whole of the shaft comes away, leaving the epiphyses behind. When an opportunity occurs to examine these bones before suppuration sets in, the shaft is found considerably enlarged, very pale, and the cancellous structure infiltrated with a straw-coloured firm substance, whilst the epiphyses and their cartilages are healthy. Even an affection so severe as this may be considerably benefited by sulphides. Thus before suppuration has set in, or whilst it has made little way, they often remove the swelling, though large doses may be required. After much suppuration, their good effects depend in a greater measure on the amount of the disease of the bone. If the whole shaft becomes necrosed, of course the sore will not heal till this has been got rid of; but suppuration often occurs and yet but little, or perhaps none, of the bone dies. In such a case the sulphides hasten the expulsion of the pus, and if the skin is already broken before they are employed, they improve the character of the wound and the discharge, and the sore heals, leaving a sunken scar adherent to the bone, whilst the finger slowly assumes its natural proportion. Large indolent abscesses may form on the back of the hands or feet. These are similarly affected by the sulphides. Whilst these remedies are thus influencing locally these strumous formations and abscesses, the child's health greatly improves, although failing previously, in spite, perhaps, of the administration of cod-liver oil and steel wine. That the improvement is due to the

sulphide is shown by the fact that the amendment occurs where only this drug is administered. On prematurely discontinuing the sulphide, fresh formations are apt to appear, especially on the occurrence even of a slight illness; indeed, a severe illness will often excite a few fresh abscesses, in spite of the sulphides.

"The sulphides appear to me to exercise a very beneficial influence in suppurating scrofulous glands in the neck. Here again they hasten the elimination of the pus, and subsequently the cheesy scrofulous matter. After the abscesses have burst, and continued slowly discharging a scanty, unhealthy pus, and when the edges of the sores have become much thickened and indurated, these remedies render the discharge more abundant, thick, creamy, and healthy, considerably hasten the evacuation of the scrofulous matter, which prevents the healing of the wound, and at the same time softens the round indurated edges, so that the sore heals much more speedily. If small doses appear to affect these sores but little, larger doses, as half a grain or a grain, should be given several times a day, or even every two hours. I need hardly say that to compass the results described the treatment must be continued several weeks, for it is in vain to expect them to occur in a few days, when the sores have been discharging perhaps for months or even years.

"The topical effect of sulphur ointment, or of an ointment of the hypochlorite of sulphur, or, still better, of the iodide of sulphur of the Pharmacopœia, is most marked on acne indurata and acne rosacea. Here, again, the effects are twofold, and even opposite, according to the stage of the eruption. If applied at the very commencement of the eruption, as soon as the little hard knot is felt under the skin, further development is arrested, and the hardness speedily disappears. For instance, if smeared over the hardness just before going to bed, in the morning scarcely any induration will be felt, though after a time, perhaps from exercise, or the irritation from washing, much of the hardness may return, to be again removed by a renewed application of the ointment, so that in two or at most three days a papule that threatened to become of considerable size may be completely dispersed. When, however, the nodule has advanced further, and suppuration has set in, then the effects of the ointment are much like those of sulphides, administered internally, on boils. The ointment hastens maturation, limits the swelling and hardness, and thus considerably curtails the duration of the eruption. Nay, further, if rubbed over the skin it appears to check the formation of the acne spots. If rubbed over the nose and neighbouring parts of the face in acne rosacea its effects are often striking. Not only does it act as in acne indurata, but the hardened, swollen tissues become softened and reduced to a more natural state. I have found the iodide of sulphur likewise useful in bromic acne, reducing the eruption, or at least considerably lessening the size of each spot. In acne the ointment should be thickly smeared over the eruption night and morning.

"Any one who gives the sulphides a fair trial in the foregoing cases will, I feel confident, have reason to be gratified with the result."—*Lancet*, Feb. 21. 1874.

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On the Physiological Action of Arsenious Acid.

Professor Boehm of Dorpat records in the *Archiv für Experimentelle Pathologie und Pharmakologie*, vol. ii. Heft 2, his own researches and those of his pupils, on the physiological action of arsenious acid. The experiments were conducted by S. Unterberger upon cats and dogs. On injection of a watery solution of arsenious acid into a vein, a gradual sinking of the mean blood-pressure occurs. The amount of sinking is in direct relation to the quantity of arsenic employed. This sinking is never preceded by an increase of the blood-pressure, and is only temporary when it owes its origin to small doses (0.005 to 0.03 gramme). At the same time, the pulse is rendered slow. These phenomena can be ascribed partly to paralysis of the abdominal bloodvessels, and partly to a diminution of the capacity of the cardiac muscles for action. The cardiac nerves in animals poisoned with arsenic exhibit normal relations. The vessels of the sympathetic areas are not paralyzed by the poison.

The action of this drug upon the intestinal canal was also studied. To arsenious acid is generally ascribed a local irritating action. The chemical reason

for this irritating action is quite unknown. This substance exhibits no special affinity either for water or for albuminous bodies. The action of this drug was studied in similar animals (dogs of the same size, age, weight, etc.) and its effects contrasted according as it was introduced by the mouth or by injection in solution into the circulation. When one has before him two similar animals which have been poisoned with arsenic, it is impossible from the *post-mortem* appearance to say which of the two animals has received the poison by the stomach or through the blood. Not only so, but the phenomena during life are similar, and the only difference is that the smallest lethal doses when given by the mouth, are not sufficient to kill a similar animal when injected into a vein; and that in the latter mode of poisoning, death always occurs somewhat later than in poisoning through the stomach.

After death, no matter how the poison was introduced, the mucous membrane of the stomach throughout its whole extent was tinged dark red, was considerably swollen, and presented a velvety appearance. The redness was always confined to the most superficial layers of the mucous membrane. In the serous membrane of the stomach, beyond a very pronounced filling of the vessels, numerous large ecchymoses were generally present; loss of the substance of the mucous membrane was never observed. The degeneration of the gastric glands, described by other authors in the rabbit, were not found. Essentially different was the appearance throughout the whole length of the intestinal canal. The mucous membrane was covered throughout its entire extent by a yellow-coloured, jelly-like, but still consistent membrane about one millimetre thick. Microscopically, this membrane appeared to consist of innumerable pus-cells, embedded in a structureless material. This membrane could be removed, when the mucous coat was exposed, generally filled with small point-like ecchymoses. The villi were greatly swollen, and were devoid of epithelium over their entire surface, and numerous pus-like cells were also embedded in their substance. In the other organs, nothing remarkable was found. The liver and kidneys had never undergone fatty degeneration. Ecchymoses in the endocardium of the left ventricle were constant, often also in the other serous membranes. These results are not favourable to the assumption of a local irritating action of the poison. The authors hold as unexplained the action of arsenic on the gastro-intestinal tract. Schmiedberg remarks the resemblance of the action of sepsin to that of arsenic, in that the former exhibits no local action. In the intestine, only traces of arsenic were found on analysis of its contents by the Marsh method.—*London Med. Record*, July 8, 1874.

Medicine.

On the Presence of Abnormal Cells in the Blood in Relapsing Fever.

In the course of the long and severe epidemic of relapsing fever which prevailed in Berlin in 1872 and 1873, Prof. Ponfick, of Rostock (*Centralblatt für die Medicinischen Wissenschaften*, May 23, 1874), undertook a large number of examinations of the blood. The positive results which he derived therefrom are calculated to open up a new series of points of view both in regard to the pathology of the blood itself, and in no less a degree to the process of relapse.

On the essential character of the facts in question Prof. P. has already commented in a communication which he made last year to the Surgical Congress, regarding a disorder of the marrow of bones peculiar to relapsing fever (*Berliner Klinische Wochenschrift*, 1873, p. 439). On that occasion, however, it was not so much the condition of the blood, as the surgically interesting affection of the bones, that formed the principal subject of his communication; and hence neither the signification nor the conjectured mode of origin of these anomalies of the blood could be discussed.

In the mean time, a further circumstance occurred which has led him to return to the subject. When, led by Obermeier's discovery, he proceeded to test his first observations during life, and, partly in concert with him, to complete them, he found in certain cases quite the same changes in the blood of living persons suffering from relapsing fever.

It has already for a long time been known to physiologists that in the blood of the splenic veins, besides the ordinary colourless corpuscles, larger forms are also found, which in their whole appearance agree with certain elements of the pulp, and are further characterized by an abundance of fatty granules. That these forms may, under pathological conditions, undergo an extraordinary increase, becoming unusually large and being transformed more or less completely into granular cells, Prof. P. has proved in a number of diseases, starting from experimental research on animals. ("On the Sympathetic Diseases of the Marrow of Bones in Internal Diseases," Virchow's *Archiv*, vol. lvi.)

When extremely fine insoluble pigment-granules are injected into the current of blood, these pass at once into the various tissues, especially the pulp of the spleen, and finally disappear, within two days at latest, from the circulation. On the other hand, from this time there are found a number, varying with the amount of injected particles, of large and small lymphoid cells in the splenic vein, and also with the portal and hepatic veins; they are thickly filled with pigment-granules, and altogether remind one of granule-cells. (*See* "Studies on the Fate of Granular Colouring Matter in the Organism," Virchow's *Archiv*, vol. xlviii.) This presence of artificial granule-cells in the blood, which has been confirmed in all points by Hoffmann and Langerhans ("On the Retention of Cinnabar injected into the Circulation," Virchow's *Archiv*, vol. xlviii.), appears so much the more remarkable, that it may be observed even after weeks and months have elapsed.

In reference to this point, the next thing to be done was to examine the condition of the blood of the splenic vein in all the various diseases which are attended with acute swelling of the spleen, especially those in which the introduction of very minute foreign bodies into the blood-current might, with more or less probability, be assumed, viz., the infectious diseases. In fact, it was found that, both in all the splenic swellings in infectious diseases, and also in a less degree in those met with in simple inflammatory diseases, the abnormal constituents of the splenic pulp—blood-corpuscles, pigments, and granule-cells—were found alike in the blood of the splenic vein, in proportions corresponding with the disease under observation. There were thus established a complete analogy between the morphological condition of the splenic pulp and the blood leaving it, both in infections and simple enlargement of the organ. In the absence of the connecting link of the chain of observation, we must for the present abstain from deriving from the morphological analogy one relating to pathogeny.

In correspondence with the size of the splenic tumour in relapsing fever, and the extraordinarily large number of pulp-cells, which here undergo fatty and pigmentary change, Prof. P. found in this disease a remarkably large number of these also in the splenic blood. Extended research, however, showed that in high degrees of splenic enlargement their occurrence was not, as in other cases it always is, limited to the portal and hepatic veins, but that they can be found, although in smaller quantity, in other parts of the circulation. In individual cases these cells were so widely diffused through the whole body, that specimens of them could be detected in every drop of blood drawn from any part of a patient.

Such a contamination of the mass of the blood, not by fluid but by solid substances, by cellular elements foreign to it, has hitherto, so far as Prof. P. knows, been ascertained only in relapsing fever; and so far is practically of pathognomonic importance. For, in the intervals between the attacks, when Obermeier's filaments are constantly absent, their presence will remove any doubts as to the true nature of the disease.

Whether it be really correct to assume that all these cells have their origin in the splenic pulp, cannot at present be exactly determined. In the mean time it seems to Prof. P. as if this explanation is in harmony, for the most part, with facts

otherwise ascertained, and especially with the results of experiments. Under this supposition, the general diffusion will have to be explained by assuming that, in consequence of the extremely profuse development of the cells in the pulp, such as generally accompanies the highest degree of splenic enlargement, they pass into the blood-current in such quantity, that the vascular regions, which in other cases remain free from them, become more and more inundated. Indeed, the splenic tumour in relapsing fever surpasses in circumference all others of acute origin; and it attains an extraordinary size in those cases especially in which a change in the blood can be detected during life.

Along with these granular masses Prof. P. has also, during life, sometimes found in the blood other foreign cells, which must not be confounded with them. The best marked specimens of these are distinctly to be recognized as endothelial cells from the vessels; but, as they have always undergone more or less fatty degeneration, they may, when this process has gone on to an extreme degree, present a certain resemblance to the cells already described. But, while the endothelial cells appear flat, or at the most lentil-shaped, the others are always distinctly globular or elliptical.

This hitherto unobserved occurrence within the living blood-current of endothelial cells which have undergone fatty degeneration, reminds Prof. P. of an observation which he made some time ago (*Deutsche Klinik*, 1867, Nos. 25 and 26), that extensive fatty change of the endothelium of the bloodvessels occurs under the influence of certain infectious diseases. In relapsing fever, this change probably reaches so high a degree that the changed cells must be thrown off in large quantities, and be carried into the blood-current. In other diseases, the destructive process appears to be confined within too narrow limits, or to go on too slowly, to allow the separated cells to be detected in the examination of a small quantity of blood.

According to these observations, we have to recognize three sources of contamination of the blood in relapsing fever. While the occurrence of Obermeier's filaments may be well referred to importation from without, the presence of the cells of both kinds must be regarded as arising from internal or self-infection. Further researches on the blood will have to be made, to ascertain the further fate of these swimming cell-corpses; and the question will especially have to be investigated, whether they may not of themselves produce new disturbances, especially embolism and its results.—*London Med. Record*, Jan. 24, 1874.

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On the Use of Trimethylamine in the Treatment of Acute Articular Rheumatism.

Dr. G. Peltier (*Progrès Médicale*, Nos. 12, 17, 19, 20, 22, and 25, 1873, and No. 2, 1874) discusses the whole of the recent observations on this subject (forty-eight in all), and analyzes them. Taking them altogether, it appears that of forty-eight cases treated by trimethylamine, twenty-two cases were cured in less than eight days, eighty-one in eight to fifteen days, seven in fifteen to thirty days, and eight have not appeared to be much, or at all, influenced by the treatment. He believes that no other tharapeutic treatment can claim such results, and he entertains the conviction that trimethylamine will render henceforth still more marked advantages, when pure trimethylamine only shall be employed, or when only hydrochlorate of trimethylamine is used, a substance of which the dose is much more easily defined. His final conclusions are these: 1. From the point of view of its chemical action, it is preferable to employ in medicine the hydrochlorate of trimethylamine. 2. From the point of view of its physiological action, trimethylamine is a slight excitant of the skin, a caustic of mucous membrane, a sedative of the nervous system, hyposthenic of the arterial system; it diminishes the amount of urea in the urine. 3. From the point of view of therapeutic action, trimethylamine has hardly been employed in anything else than in articular rheumatism; it calms the nerves, relieves the congestion of the articulations, and diminishes the fever. On the whole, it appears to be the drug which, up to the present time, has given the best results.—*London Medical Record*, March 18, 1874.

The Urine in Addison's Disease.

Rosenstirn (Würtsburg) has carefully and uninterruptedly, for many days, examined (*Virchow's Archiv*, Nov. 1872) the urine of two patients in Bamberger's clinic, who were affected with Addison's disease. Both were men, one seventy-two and the other sixty years of age. Their appetite was good, and their diet was regulated in the following manner: In the morning, soup; at noon, soup, vegetables, and meat; in the evening, soup and meat. Notwithstanding the richness of this diet, Rosenstirn has found a considerable diminution in the quantity of urea excreted, which never exceeded twenty-four grammes in the twenty-four hours. A few times it fell to thirteen grammes, while in three healthy individuals, aged respectively twenty-five, sixty-seven, and eighty-two years, submitted to the same regimen and examined comparatively, the quantity excreted in the twenty-four hours never fell short of twenty-six grammes.

Another notable fact is the sensible augmentation of indigo in the urine of patients affected with Addison's disease. In one of the patients, Rosenstirn found the mean to be 64.5 milligrammes in 100 of urine, and in the other 75.3; that is, eleven or twelve times the normal quantity.

Thus, in Addison's disease, there is a very considerable diminution in the activity of the molecular changes. Is this owing to alteration in the suprarenal capsules, so richly supplied with nerves? Has the pigment deposited under the skin its origin in indigosuria? Is it admitted that the diverse symptoms occurring in Addison's disease are the result of a blood-affection arising from its incomplete purification? This hypothesis has tended to establish a comparison between the etiology of these accidents and uræmia, with which the last stage of Addison's disease has much similarity.—*New York Med. Journ.*, from *Lyon Médical*, April, 1873.

On Sugar in Œdematous Fluids.

C. Boek (*Reichert und Du Bois-Reymond's Archiv*, 1873, part v.) says that it is well known that a substance capable of reducing oxide of copper has been tolerably constantly found in the cerebro-spinal fluid, and in the fluid of echinococcus sacs. This substance was regarded by M. Bernard as sugar. With special reference to this substance, the author has experimented on œdematous fluids. In cases of anasarca, a lancet-shaped canula was introduced through the skin, and clear drops of fluid, quite uncontaminated and free from blood, could be caught in a vessel placed for the purpose. In favourable cases, 1000 cubic centimètres could be obtained daily. In the different diseases which caused the œdema, the fluids differed a little from each other in their physical properties. The fluid was clear, like water, and only seldom was a yellowish or greenish tinge observed, chiefly when icterus was present. Spontaneous coagulation from fibrin did not occur in any case, even after long standing, or by the addition of defibrinated blood. The reaction was always more or less alkaline; the specific gravity from 1005 to 1010, and this independently of the cause of origin of the œdema. Urea was constantly found in small quantities (.1 to .2 per cent.) To test for sugar the albumen must, of course, be removed. The albumen varied in quantity from .06 to .9 per cent. In most cases it was .1 to .2 per cent. The author employed the various tests for sugar in the most careful manner, and arrived at the conclusion that the substance was really sugar. Quantitative estimations were made with Fehling's solution. In a case of chronic nephritis with pronounced dropsical symptoms, the clear fluid had a specific gravity of 1009, contained only traces of albumen, and .04 per cent. of sugar; in another similar case .048 per cent. was obtained. A patient with heart-disease showed .077 per cent. sugar in his œdematous fluid. Often no sugar was found, but this became more rare the more expert the author became in the investigation. The investigation must always be made on fresh fluid. The author has also found sugar in pleuritic effusions. These results have been compiled by Professor F. A. Hoffmann, from the papers left by Dr. C. Boek at his death.—*London Medical Record*, May 13, 1874.

On Auditory Vertigo (Ménière's Disease).

Several important articles have recently appeared on what is variously called "auditory vertigo," "vertigo ab aure læsâ," or, from its discoverer, Ménière's disease; the most recent and one of the most able is by CHARCOT.[1]

If a patient have an attack of giddiness, with vomiting, especially if his vomit contain bile, it frequently happens that a superficial view is taken of his case, and that an associated aural trouble is carelessly overlooked or disregarded. Charcot says that auditory vertigo may be erroneously put down to apoplectic cerebral congestions, to *petit mal*, but that it is most often attributed to gastric disorder. Indeed, Trousseau says that vertigo "ab aure læsâ" greatly resembles vertigo "a stomacho læso." In this country auditory vertigo is very often, we believe, ascribed to affection of the liver; there being, however, no very good reason for this diagnosis, mostly, indeed, only the inconclusive evidence in favour of it that bile is brought up; but so it is in all urgent vomitings, however caused. Whatever view we may take of the cause of a paroxysmal vertigo, nothing justifies us in neglecting investigations for aural trouble or in ignoring them when found. It would be as absurd to ignore the hemiopia and other visual trouble preceding the headache and vomiting of *migraine*. This disease, often passing under the unfortunate name of "sick-headache," by the way, is now, thanks, in this country especially, to Anstie, Latham, and Liveing, shown to be really a nervous affection, and not a mere stomach-and-liver affair, and thus not one requiring remedies exclusively addressed to gastric and hepatic derangement.

The case which Charcot relates is a very important and a very remarkable example of Ménière's disease. But before we speak of it, we may give a brief account of some of the symptoms of that affection.

The patient has, usually, a sudden attack of giddiness, accompanied by reeling gait, great pallor of the face, free perspiration, feeling of fainting, or even actual loss of consciousness; he feels sick or actually vomits. At the same time, there is usually a great noise in one or in both ears: it may be that the patient's hearing has been good before, and that he is afterwards deaf, or it may be that there has been for a long time some kind of aural trouble. We speak only of the prominent symptoms, of the giddiness, the reeling, and the affection of hearing. The symptom vomiting, being obtrusive, cannot be disregarded nor underrated, and therefore need not be commented on; there may, however, be only nausea.

The important matter is to show how the aural trouble is associated with the vertigo and reeling. We use the very general expression "aural trouble" because, as we shall see, the kind of affection of the ear varies very much, although possibly in the production of auditory vertigo the immediate cause is some affection of the labyrinth.

For our purpose, the labyrinth may be taken to consist of two functional parts, the cochlea and the three semicircular canals; these two parts have corresponding divisions of the auditory nerve. It seems to be agreed that the cochlear division is for the perception of musical sounds. As to the function of the three semicircular canals, or, speaking strictly, of their contents, there is a difference of opinion. Helmholtz's view is that they serve in the appreciation of ordinary sounds. The view taken by Goltz is that "being subservient to the maintenance of poise, they are, as it were, the organ of the sense of equilibrium of the head, and thereby of the whole body." (Knapp's *Archiv of Ophthal. and Otol.*, vol. ii. p. 24.) There are certainly facts supplied by experiments on animals, the well-known experiments of Flourens, which show that the canals have something to do with the regulation of movements, chiefly those of the head. Vulpian (*Physiology of the Nervous System*) tells us not only that injury of them produces disorderly movement, but that each canal—judging from the fact that a particular disorderly movement follows lesion of each—has some special duty, serves to regulate some particular group of movements of the head, and thus indirectly to regulate some group of movements of the whole body in locomotion.

[1] Le Progrès Médical, Jan. 24 and 31, 1874.

"Two of the semicircular canals are vertical, the third is horizontal. In this pigeon, the canals of which have been carefully exposed, I break the horizontal canal on one side, then that of the other side. The animal gives obvious signs of pain, and his head moves violently from right to left and from left to right, following a horizontal line; at the same time the eyeballs are agitated, and you can observe further that the animal turns itself round upon its vertical axis. In this other pigeon, I cut the inferior vertical canal on each side, and I determine movements of the head from above downwards as impetuous as the preceding ones; then the animal throws its head backwards; it shows, as you see, a tendency to fall backwards. I cut now the upper vertical canal on each side on this third pigeon. The vertical movements of the head immediately come on; they are very violent and analogous to the preceding ones. Nevertheless you see that the animal tends to fall forwards, and that to stop these movements, it ends by leaning the top of its head forwards on the ground."

It is right to mention that Dr. Brown-Séquard has said, "I have ascertained that the phenomena observed in experiments on these canals, do not depend on the section of these canals, as this operation may not cause these phenomena, but that they are the results of irritation of the auditory nerve, from the dragging on it by the membranous semicircular canals at the time when we divide them."

We must bear in mind the different positions of the canals, in order to understand Goltz's hypothesis. Goltz thinks that the terminations of the nerves in the canals are in health excitable by pressure or tension, as the tactile nerves of the skin are. The excitation is by the pressure of fluid, which pressure, according to him, varies, for physical reasons, with the position of the head. The central nervous system, at any given time, receives information as to the position of the head from the nervous contents of that canal, which being the most dependent is consequently most excited by pressure. If such be the physiology of the canals, the interpretation of the result of damage of them follows easily. When one or more of these canals is damaged, the central nervous system is wrongly informed as to the position of the head. We may suppose that this results either because in sudden lesion an exaggerated impression is transmitted to the brain from the over-excited canal, or because as a consequence of very extensive injury of a canal its nervous contents cannot be excited at all, and thus there is no impression for transmission. In consequence of the centre overacting on wrong information, or underacting because it is without information, certain factors in the locomotor movements will be out of harmony with the rest. Thus there will be reeling. There is, however, in slight cases, not reeling, but simply vertigo. However, the reasoning is the same; vertigo (as is plainly seen in the study of cases of palsy of ocular muscles) is a motor symptom; it is, Dr. Hughlings Jackson believes, a rudimentary or incipient disorder of co-ordination of locomotive movements; it is frequently, however, spoken of as a cause of reeling. The disturbances of equilibrium are, Goltz thinks, temporary, when the semicircular canals are injured on but one side. Goltz's hypothesis at first glance appears to refer only to movements of the head. He shows, however, that the movements of the body are dependent on, perhaps we may say "led by," those of the head. This view seems to us to be supported by the effect of section of the muscles of the back of the neck in dogs (in the operation to expose the occipito-atloid space); the result is, Magendie and Bernard state, disorderly movements like that of drunkenness. Bernard[1] finds, too, that, although section of the muscles of the back of the neck of pigeons does not produce disorderly walking, it destroys their chief mode of locomotion; they cannot fly.

These last-mentioned facts have a still wider bearing. The auditory nerve, as Lockhart Clarke has long since pointed out, sends a large division to the cerebellum. According to Meynert, the whole of it is lost in the cerebellum. It is a fair speculation, then, that the nervous centres of which we have metaphorically spoken as being wrongly informed, in cases of lesions in the semicircular

[1] Leçons sur la Physiologie et la Pathologie du Système Nerveux, vol. i. p. 497.

canals, lie in the cerebellum, or, in other words, that the divisions of the auditory nerves in the canals are afferent to centres in the cerebellum for certain movements of the head, for those which take the lead in and regulate locomotion. This would accord with the generally accepted view that the cerebellum is the organ for the co-ordination of movements of locomotion; it matters not whether the cerebellum be disturbed from actual disease in it, or be disturbed by irritation propagated to it from without. The word co-ordination is, however, not a safe one to use, for there are still some who speak of a "faculty of co-ordination," and even of a centre for it. Dr. Hughlings Jackson believes that the cerebellum is only to be considered the organ of co-ordination of movements of locomotion, in that it represents more especially the locomotive movements of the spine (head and trunk). The disorder of co-ordination of movements of locomotion, actual in the reeling, or rudimentary as in vertigo, from disease of this centre, is owing, he considers, to paresis of the spinal muscles. Hence the significance of the effect of section of the muscles of the back of the neck, in effect a paralysis of them, in the above-mentioned experiments of Magendie and Bernard. The seemingly erratic action of the legs in some cases of cerebellar disease, is for the preservation of balance consequent on the spinal paresis; the patients keep their legs wide apart, and, so to speak, their legs run after the trunk to "under-pin it in its various over-inclinings from side to side and from back to front." The disorderly walk which occurs early in some cases of disease of the cerebellum is a reel; it is a walk like that of a drunken man; so also is, so far as one can judge by reports of patients and observation of a few cases, the walking of patients during the paroxysms of Ménière's disease. The speculation is that the last link in the morbid chain in Ménière's disease is disorder of the centres in the cerebellum, which especially empower the muscles of the neck and trunk. [The only statement of the hypothesis, that the vertigo and reeling in cases of cerebellar disease depend on paresis of the spinal muscles, which I can find, is contained in Niemeyer, who quotes Immerman (*Humphreys and Hackley's Trans.*, vol. ii. p. 188 and p. 244). At first glance it seems an indequate explanation of the disorderly co-ordination of reeling. But we must take note of secondary effects of paralysis; these are best seen in cases of palsy of oculo-motor nerves. There no doubt are, in cases of spinal paresis, indirect results of this paresis analogous to the "erroneous projection" and "secondary deviation" in cases of paralysis of the ocular nerves.—J. Hughlings Jackson.]

So far we have said nothing of the associated deafness. This, as Knapp urges, shows that the lesion in case of Ménière's disease is not limited to the semicircular canals. He brings forward special evidence on this matter. He points out that not only is there partial deafness, but that there is deafness for certain musical tones, which, borrowing the form of an expression of ophthalmologists, he described as "a contraction or limitation of the field of audition." This is, he thinks, clear evidence that the cochlea itself is involved also. Besides the positive value of this conclusion, it is negatively valuable as showing, to use Knapp's words, that Ménière's disease "is neither an affection of the trunks of the auditory nerves, nor of their centre in the brain." (Op. cit. p. 277.)—*London Medical Record*, April 22, 1874.

(*To be concluded.*)

General Paralysis supposed to be of Syphilitic Origin cured by Iodide of Potassium.

Dr. Buzzard exhibited, at a late meeting of the Clinical Society of London, a patient, aged 46, who had recovered from an attack of general paralysis, supposed to be of syphilitic origin. The man had been brought to the National Hospital for Paralysis on January 8, 1873, with paralysis of both facial nerves, of all four extremities, and incomplete paralysis of respiration, deglutition, and of the right sixth nerves, together with general cutaneous anæsthesia. His condition was so grave that he was at once admitted. He could not lie down, and could only take fluid nourishment by spoonfuls. His attack had

commenced one month previously with numbness in the finger-ends, and weakness of the legs and arms, which progressed so rapidly that in three days he could not leave his chair. One week after the onset his speech became thick, and he felt a sense of constriction round the waist. After another week his powers of deglutition and breathing were involved. He continued to get more and more feeble, so that when admitted he could not move his legs, and had only the slightest power of using the muscles of his thighs and arms. He was permanently lame in the right leg, from an attack of infantile paralysis in childhood. His health previous to the attack had been uniformly good. There had been no injury, nor diphtheria, nor exposure to cold; and the attack was unaccompanied by fever, pains, or muscular contractions. His pulse on admission was 76, and his temperature 99°. He had suffered from a chancre and bubo fourteen years before, which were not followed by sore-throat or skin-eruption. On admission he was placed on a water-bed; beef-tea, eggs, and wine were ordered, and ten-grain doses of iodide of potassium given three times a day. Within twenty-four hours he had improved, and in a week could lie down, could close the right eyelid to some extent, and could swallow solid food. The muscles of the legs, in which contractility to faradaism had been abolished, now responded slightly to the induced current. In four days more the right eye could be completely closed, his breathing was no longer difficult, and his limbs were regaining power. At the end of January he could close both eyes; and in a few weeks more all the facial muscles had recovered. Towards the end of March he could stand with assistance, and on May 6th he could walk with some help. On May 21st, four months and a half after admission, he was discharged, and a week or two afterwards resumed his employment, which he has since regularly carried on. At the present time he shows no traces of his attack. His treatment consisted of iodide of potassium in gradually increasing doses, amounting at last to sixty grains three times daily, and this was followed by subcutaneous injections of the chloro-albuminate of mercury for two months. (For the formula, see *Lyon Méd.*, June, 1872.) Dr. Buzzard was of opinion that the attack was due to syphilitic thickening of the dura mater about the basilar process and upper part of the spinal column, causing pressure upon the pons Varolii and spinal cord.

In reply to Mr. Spencer Wells and Dr. Moxon, Dr. Buzzard said that he had tried the subcutaneous injection of mercury in this case, because he thought that if an eligible solution could be discovered the injection of a few drops by a fine syringe would be preferable to the nasty method of inunction, or the troublesome one by calomel vapour-bath, in cases in which administration by the mouth disagreed. The quantity of mercury employed would, moreover, be smaller, and determined most accurately. He chose the chloro-albuminous solution of Dr. Staub, because that had been described as not causing abscesses, the great objection to all others. In three or four cases in which he had tried this liquid, although a good deal of local irritation had sometimes followed, there had been no suppuration.

Mr. Brudenell Carter asked whether the action of the iodide of potassium was thought to prove the syphilitic character of this case.

Dr. Buzzard said that his diagnosis was founded partly upon the character of the disorder, which was evidently due to pressure upon nerve-substance, and not disintegration of it. The source of such pressure would almost necessarily be in the membranes; and the mode of onset and progress of this case were just what would be occasioned by a thickening of the dura mater such as syphilis would cause, or by the growth of gummata. Other sources were excluded by the history; and the only antecedent in the case was a syphilitic infection. The clinching point was the immediate improvement and rapid complete recovery of the patient under specific treatment.—*Lancet*, March 28, 1874.

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On Phosphorus in Melancholia.

Dr. S. W. D. Williams, the Superintendent of the Sussex Asylum, gives a *résumé* of half-a-dozen cases of melancholia treated by phosphorus (*Journal of Mental Science*, April, 1874). The medicine used was in the form of the

pills prepared by Messrs. Kirby & Co., which are stated to contain each the thirtieth part of a grain of pure phosphorus. The first case was a male, aged fifty-one, agricultural labourer, no hereditary taint, but father given to drinking: admitted September 6, 1873. The attack was pure melancholia, uncomplicated with delusions, and had been coming on for twelve months. Sleeplessness was at first treated by chloral, which was changed for opium and chloric ether. He then began to refuse his food, and, on November 12, was ordered one phosphorus pill night and morning. In a few days the depression was less, and in a month had quite left him. The second case was that of a female, aged thirty, who recovered from two attacks of melancholia, relapsing almost immediately. She was then put on phosphorus; the third attack only lasted twenty-seven days, and she has now (two months) remained cheerful and well. The third case was also a female, aged fifty-four. The disorder was hereditary, and had lasted five months. She had a constant desire to commit suicide, but no delusion. Phosphorus was given, and persevered with for seven weeks, without any benefit. Opium was then given, with immediate result, and recovery took place. In the fourth case, a female aged thirty-three, with a strong suicidal and homicidal impulse, phosphorus was prescribed after she had taken iron and cod-liver oil. She improved so as to be able to employ herself in the laundry, but relapsed, and refused to take the pills. Since then she has become worse. The fifth case was a female, aged twenty-seven, who was admitted in an attack which was said to have lasted ten days. Chloral and opium were tried without effect. After taking phosphorus a week she had much improved, and there was every prospect of recovery. The last case was a male patient, aged thirty-nine, who had been intemperate both in smoking and drinking. He suffered from acute mania, which had supervened upon symptoms of locomotor ataxy. The latter increased, but the mania passed off, and was followed by melancholia. Phosphorus was given, and the mental symptoms disappeared, but there was no improvement in the locomotor ataxy.

Dr. Williams remarks that in all these patients there was noticed within a few days of beginning the phosphorus a peculiar coated state of the tongue, not unlike the silvery tongue which follows the prolonged use of arsenic, as stated by Dr. Eames. No toxic or other disagreeable symptoms were observed. —*London Med. Record*, July 1, 1874.

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Laryngeal Phthisis.

Most of us are aware of the difference of opinion which exists amongst pathologists in respect to the relation of chronic disease of the larynx to phthisis of the lungs, some describing the one, and some the other, as the primary affection. The question has lately been subjected to experiment by Sommerbrodt, who gives a description of the results he obtained, and the conclusions at which he has arrived, in the *Archiv f. Experiment. Pathol. u. Pharmac.*, 1873, vol. i. page 264, and *Centralblatt*, 1873, September 27, No. 44. Sommerbrodt experimented on rabbits by inserting a glowing wire in the larynx and upper part of the trachea and there leaving it, where it acted as a chronic irritant, causing death in from four to ten weeks. On examination at various periods, the following was discovered to be the sequence of events: Some eight days after the operations, small cheesy centres were found in the subcutaneous tissue near the wound. The mucous membrane of the trachea at the same spot was ulcerated, and the cartilage laid bare. The inflammation thereupon spread more or less rapidly along the air-passages to the finest bronchi, thence to the peribronchial tissue, and finally into the pulmonary alveoli. It was easy to trace with the microscope the inflammatory process advancing from the neighbourhood of the bronchi into the alveolar septa, by the thickening of the latter, and their infiltration with lymphoid cells. At the same time there was found combined a desquamation of the intra-alveolar epithelium (Buhl's *peribronchitis purulenta* and *desquamative pneumonia* without purulent softening of the tissue). The experimenter concludes that chronic inflammatory irritation of the trachea leads to purulent peribronchitis, and thence to phthisis. Sommerbrodt was able to show by crucial experiments that

the pulmonary disease was not secondary to the infectious centres, or cheesy masses described as occurring subcutaneously at the seat of wound. The lung disease which is secondary to these or other cheesy masses in rabbits, is of the nature of a caseous lobar pneumonia, without the characters of bronchial affection above noticed. It is worthy of remark that dogs similarly operated on never gave the same result—never died of phthisis. Their "constitution" is, therefore, entirely different from that of rabbits.—*Med. Times and Gaz.*, Dec. 13, 1873.

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On the Course of Severe Lung-Affections during Pregnancy.

Dr. A. Wernich (*Beiträge zur Geburtshülfe und Gynäkologie*, vol. ii., part 3, 1873) believes, from his own experience, that phthisis runs a milder course during gestation; while the reverse is the case during the puerperal state. In acute pneumonia, the excess in mortality arises from the pressure of the gravid uterus on the diaphragm impeding the movements of respiration and retarding the circulation of the blood through the lungs, throwing more strain on the right side of the heart. In pneumonia, death takes place chiefly from insufficiency of the heart, and in pregnant women with the appearance of œdema of the lungs, according to Jürgensen (*Sammlung Klinischer Vorträge*, No. 45), emptying the uterus of its contents would, by relieving the pressure off the abdominal vessels, cause an increased flow of blood to the heart, coupled with the freer movements of the diaphragm, burden the right side of the heart still more, and augment the œdematous state of the lung. The treatment is to strengthen the contraction of the heart by the internal administration of digitalis, and unloading the right side of the heart by venesection, when the dyspnœa and distress are intense. The author relates two cases where he extracted blood; in one by venesection, in the other by cupping. In the first case (venesection) the relief was immediate, the patient falling asleep directly. In both it seemed to induce labour, signs of uterine contraction being present before the operation. Living six months' children were brought, by the aid of instruments, into the world. In the case of venesection the patient shortly afterwards collapsed and died. In the other, the patient wandered in her mind, saw strange figures, exhibiting the usual symptoms of mania from anæmia of the brain. Digitalis and stimulants were given with good results, the patient making an excellent recovery. In a third case, blood was not extracted; sinapisms and water compresses alone being used, with the administration of digitalis. The patient did well, without miscarrying. Seeing that extraction of blood brought on miscarriage, the object to be avoided, the question is, should it be done? The writer believes in all cases where the symptoms are very urgent and not relieved by other treatment, the proper course is to bleed (Gusserow mentions a case where the result was good without bringing on labour); and in case of collapse, to transfuse blood from the arm of another. That both children were born alive, he wishes particularly to note.—*London Medical Record*, March 18, 1874.

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On a Peculiar and Dangerous Affection of the Respiratory Organs in Children.

Dr. Finch (in a pamphlet published by Harvey, Colchester) relates five cases of a laryngeal affection in children, which he attributes to the pressure of an enlarged thymus gland upon the recurrent laryngeal nerves, causing paralysis of the dilators of the glottis. The symptoms observed were persistent hoarse stridulous respiration, lasting with more or less complete remissions for months, or even years. There was an absence of all febrile symptoms. In all the cases a projection of the upper portion of the sternum was noted, and in three some enlargement of the cervical glands. Two cases were fatal from the gradually increasing difficulty of respiration, and in one of these a *post-mortem* examination was made. The thymus gland was found to be greatly enlarged, occupying the upper portion of the anterior mediastinum, from the second intercostal

space to near the lower border of the cricoid cartilage. The lining membrane of the larynx and trachea was injected and darker than natural, and adhering to the lower half was much tough dry mucus. In the three remaining cases, recovery from a succession of intermittent attacks had taken place.

[Numerous cases of hypertrophy of the thymus gland have been recorded in which there was no spasmodic affection of the larynx; and it has been shown that the theory of Kopp, that "laryngismus stridulus," the so-called "thymic asthma," was dependent upon the irritation or pressure of an enlarged thymus, was incorrect, and that in the majority of cases of laryngismus no such enlargement of the gland exists. It is to be regretted that the relation of the enlarged thymus to the laryngeal nerves was not ascertained in the *post-mortem* examination recorded by Dr. Finch.]—*London Med. Record*, Aug. 12, 1874.

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Treatment of Hooping-cough.

Dr. Mascarel states (*Bulletin Gén. de Thérapeutique*, June 30, 1874) that in his opinion hooping-cough depends on two elements—a nervous element and a catarrhal element. The nervous element resides in the inferior branches of pneumogastric nerves. This is so true that there is a form of gastric hooping-cough in which every attack of coughing is accompanied by vomiting. The catarrhal element has its seat at the orifice of the glottis and of the larynx, as well as through the whole extent of the mucous membrane, both aërial and digestive, receiving filaments from the two pneumogastrics, as is rendered evident by the masses of mucus of various kinds coughed up by children during and at the termination of their crises. If we once admit these two principles —a nervous element and a catarrhal element—we must act therapeutically against both; and as the nervous state is antecedent to the catarrhal state, we ought to act specially against the neurotic. Every morning between six and eight a minute dose of tartarized antimony should be given in solution in water. In children over two years of age, the antimony may be replaced by ipecacuanha. Every evening at the last meal a small pill may be given containing one-eighth of a grain of extract of belladonna, which may be gradually increased till five or six of the pills are taken at once Dr. Mascarel has tried this plan for from eighteen to twenty years, and has hardly ever known it to fail in relieving or completely curing the disease in three weeks The use of the belladonna should be gradually discontinued. An essential condition of success is to have the extract of belladonna pure, and one test of its purity is the appearance of a peculiar exanthema over the face and body of the child, which may so alarm the parents that it is prudent to forewarn them of its occurrence. This only appears, however, once in seven or eight cases, and its slight gravity is shown by its spontaneous disappearance in the course of a few hours. A second evidence of the goodness of the preparation is the dryness of the throat, which many of the older children complain of. Dilatation of the pupils is rarely observed, unless the remedy has been applied directly to the eyes. In cases where the cough is extremely violent and is accompanied by vomiting, when it may produce hernia and ecchymosis of the conjunctiva, the employment of emetics is contraindicated, and instead of them small doses of syrup of morphia, with a little ether, may be given, the use of the belladonna being continued. After breakfast, a few teaspoonfuls of strong coffee may be given with advantage. Dr. Mascarel does not believe in the beneficial effects of change of air, as he has had cases under his care that have come from a distance, and in which, nevertheless, the disease pursued its course unaltered. —*Practitioner*, Aug. 1874.

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On Peripleuritis.

Bartels (of Kiel), in the *Deutsches Archiv für Klinische Medicin*, 1874, narrates three cases of peripleuritis. By peripleuritis is understood a suppurative inflammation in the costo-pleural cellular tissue, occurring independently of traumatic causes or of pleurisy. This disease is rare. The only other re-

ported cases are two by Billroth, two by Wunderlich, and one by Suadicani—making a total of eight cases. Respecting its etiology, Bartels says nothing is known. The abscess appears to have little tendency to open internally into the pleura. It sometimes by extension causes pericarditis. Nephritis is a common complication.

In speaking of diagnosis, Bartels says the important point is to distinguish this condition from empyema. The affected side of the thorax is sometimes as much bulged and as motionless in peripleuritis as in pleural effusion, but in the former disease the bulging has a much greater tendency to become especially prominent in one or two intercostal spaces. The form of dulness differs also in the two diseases. In peripleuritis the inferior portions of the thorax are usually resonant, and the lower border of the lung descends during deep inspiration. Another important feature of peripleuritis is the complete absence of any displacement of neighbouring organs. When fluctuation is discoverable in an intercostal space, the abscess usually becomes less tense during inspiration and more so during expiration. The prognosis is grave. Of the eight reported cases four died, in two recovery was complete, and in the remaining two fistulous openings and deformity were left. The important point in the treatment is, to evacuate the pus as early and as completely as possible.—*London Medical Record*, July 8, 1874.

On the Liquids Effused into the Pleura.

A work on this subject recently published by Dr. Méhu (*Archives Générales de Médecine*) gives the *résumé* of a long series of experiments undertaken by the author, with the intention of throwing light on the differences between the physical and chemical qualities observed in the liquids of the thoracic cavity. From these experiments, M. Méhu has deduced the following conclusions. In pleuritic effusions the amount of mineral salts is nearly invariable, and always independent of the quantity of albuminous matters contained in them. This rule applies to all the serous liquids of the animal economy, as hydrocele, ascites, hydrarthrosis, hygroma, ovarian cysts, etc. Each kilogramme of liquid yields from 7.5 grammes to 9 grammes of anhydrous mineral salts. Fibrin is more specially present in acute pleurisy in an average quantity of 0.4232 gramme; and it is also present in cases where the thoracic effusion is the result of some obstruction in the circulation of the blood in the heart or the great vessels; but it is then found only in small proportion, being on an average 0.149 gramme. Fibrin was not found in purulent liquids, nor in effusions brought on by the presence of heterologous products such as tubercle, cancer, etc. Whenever the weight of the dry residuum did not attain 50 grammes to the kilogramme of liquid (average 30.1 grammes), there was some impediment to the circulation of the blood in the heart or great vessels, and the effusion was owing to that obstacle (cardiac affections or cirrhosis). When the weight of the dry residuum left by the evaporation of 1 kilogramme of liquid exceeds 50 grammes (the average being 65 grammes, the lowest quantity obtained 58 grammes), and this liquid coagulates after operation into a mass of more or less consistence, it may be taken as certain that acute pleurisy is present. According as the amount of fibrin is large, the patient rapidly recovers; a single puncture generally effecting a cure. If in some cases two punctures have been made, it is not always because the liquid has reproduced itself, but because the operator, fearing some annoyance to the patient, has chosen to extract only a portion of the liquid in the first instance. When the condition of the patient calls for several successive punctures, the proportion of fibrin increases in proportion as the disease is near cure. On the contrary, the fibrin remains in very small quantity, or is not present at all, if the disease shows a tendency to grow worse. Practically, at the bed-side, every pleural liquid for which the gravimeter indicates a density above 1.018 at a temperature of 59° Fahr., coagulates and which sets by degrees into a more or less consistent mass, betokens a clearly defined acute pleurisy, which will be cured the more rapidly as the coagulum becomes more firm. Every pleural liquid of which the gravimeter indicates a density below 1.015 at the temperature of 59°

Fahr., indicates that the effusion depends on the presence of some impediment to the circulation of the blood in the heart or great vessels. Hydrothorax is present. Here the prognosis depends on the primitive lesion, generally more serious than the effusion itself. Every pleural liquid of which the gravimeter indicates a density above 1.018 at a temperature of 59° Fahr., and which does not yield any fibrin, indicates a lesion of the pleura, due to the presence of heterologous product, such as tubercle or cancer, generally a very serious lesion, so that these liquids are generally an unpleasant prognosis.

In all cases M. Méhu recommends that a temperature of fifteen degrees (59° Fahr.) should be taken as a term of comparison, without having recourse to calculations to correct it.—*London Med. Record*, July 29, 1874.

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On the Use of Ipecacuanha Enemata in Infantile Cholera and Phthisical Diarrhœa.

Ipecacuanha enemata have been tried from time to time in divers diseases of the intestines. Graves and others have done so, but no one seems to have studied this method of treatment with any care. M. Boudon has taken up the subject of late, and the results of his experiments are published by M. H. Chouppe (*Bulletin Général de Thérapeutique*, June 15, 1874).

I. *Method of Treatment.*—Take 308 grains (20 grammes, nearly three-quarters of an ounce) of bruised ipecacuanha root; and 18 ounces (500 grammes, nearly a pint) of distilled water. Make three successive decoctions (for ten minutes each) in one-third of the water. Mix; give half of this quantity for an enema; or, in the case of a child, a quarter only. For an adult, add eight or ten drops of tincture of opium (*British Pharmacopœia*=five or six drops of Sydenham's laudanum). In some cases the quantity of ipecacuanha used has been double that given above, namely 40 grammes. Two enemata are to be given daily: one in the morning, two hours before breakfast; one in the evening, three hours after the last meal. Nausea sometimes follows; vomiting never. The aim of this method is to avoid producing vomiting; it is not supposed that the local effect of the ipecacuanha upon the rectum has much to do with the results. It is seldom that any inflammation of the rectum follows the enemata; and when it does, it passes of as soon as the enemata are left off. Reasons are given for believing that it is the emetina of the injections which does good, and not the opium or the minute quantity of tannin dissolved in them.

II. *Infantile Choleraic Diarrhœa.*—Of five cases, four recovered after from three to twelve enemata; one died, very likely in consequence of being wrongly fed during the treatment. In no case was vomiting produced. M. Chouppe thus sums up. Ipecacuanha seems to act powerfully against the diarrhœa of infants; and when given in enemata, which do not provoke the vomiting which often follows when ipecacuanha is given by the mouth, the enemata can be continued for a long time without weakening the patient, and therefore may be tried in obstinate chronic diarrhœa.

III. *Phthisical Diarrhœa.*—Of seventeen cases, cure took place in thirteen, amendment in two, failure in two. In one case the diarrhœa, which was unaffected by enemata of ten grammes each, was stopped when the quantity of ipecacuanha used was raised to twenty grammes. Most of the patients were in an advanced stage of phthisis; one, whose diarrhœa had lasted ten months, required thirty-four enemata before it was cured.—*London Med. Record*, August 12, 1874.

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On Pseudomembranous Enteritis.

M. Raynaud (*Le Progrès Médical*, p. 413) describes a case in which some fragments of membrane were passed by a woman, sixty years old, with cardiac disease. The woman had experienced no colicky pains; whereas in the cases reported by M. Siredey, the persons had suffered most intense pains, almost as severe as labour-pains, and in all similar instances reported it was just the

same. One of the pieces was more than a yard long, and might have been mistaken for a tapeworm. It was a hollow cylinder, closed at its ends by a flattened piece of membrane. Its external diameter was nearly a centimètre, its internal one about five millimètres. The microscope showed traces of mucine, and a considerable quantity of leucocytes. The discharged matters were, in fact, concretions of intestinal mucus. How they were formed is difficult to explain; but M. Raynaud thinks it reasonable to suppose that they were the result of a deposit of mucus on the inner coat of the intestines, which, becoming detached, were by the peristaltic action of the bowels formed into tube-like bodies. In the discussion which followed the presentation of the specimen, M. Debosc thought that gradual contraction of the tube took place after its detachment from the intestine. M. Carville, from his experience of the peristaltic action observed in animals, could not believe that the tubes were formed as M. Raynaud suggested.—*London Med. Record*, September 30, 1874.

Surgery.

Treatment of Sebaceous Tumours of the Scalp.

Mr. Henry J. Tyrrell, Surgeon to the Mater Misericordiæ Hospital, Dublin, in an interesting and instructive article on this subject (*Dublin Journal of Medical Science*, July, 1874), lays down the following practical rules:—

1. That those which occur at birth, or in early infancy, should be removed without delay, as experience proves such tumours have a tendency to cause destruction of the bone, and to perforate the skull.
2. That the ordinary sebaceous tumours of the hairy scalp do not cause absorption of the bone.
3. That when a sebaceous cyst ulcerates a spontaneous cure is not to be expected.
4. That when a sebaceous cyst ulcerates it should be entirely removed as soon as possible.
5. That the ordinary sebaceous tumours may remain harmless for an indefinite time, and do not necessarily grow larger from day to day.
6. That the surgeon should not operate on them unless the patient is in good health, and after a careful examination, particularly of the urinary organs.
7. That for removing such tumours the knife is preferable to caustic.
8. That external applications and internal remedies are worse than useless.

On Bromide of Potassium in Alcoholic Amblyopia.

Dr. Quaglino (*Annali di Oftalmologia*, vol. iii., and *Gazzetta Medica Italiana-Lombardia*, March 21, 1874) regards the form of amblyopia in question as a result of the abuse of alcoholic liquors; he doubts whether there is an amblyopia arising from the abuse of tobacco, or considers it at least extremely rare. Men are generally the subjects of the affection. It usually commences slowly, and is first indicated by shortening of the range of vision, or diminished clearness of distant objects, due to the obscuring of the visual field by a thin cloud. It is most marked in bright daylight and in the summer, and diminishes on cloudy days, in the evening, and when the patient is in a moderately lighted place. This erethism of the retina is characteristic of the early stages of the malady. As it advances, the faces of persons appear to the patient as if they were covered with a white powder, and the acuteness of vision progressively diminishes until the patient can only distinguish the medium letters of the test-scale with difficulty at the distance of a few inches. In some rare cases, there is an alteration in the power of perceiving colours or their gradations.

In such cases, the centre of the field of vision is covered by a central yellowish or blue opacity. Having arrived at a certain stage, the amblyopia remains stationary for several months, both eyes being affected. The cause remaining, sight is more and more impaired, until at last large objects only can be perceived. If the cause be removed, the malady may disappear spontaneously.

On external examination, there is only increased brightness of the cornea, with some slowness of the movements of the iris. In old persons there is also varicosity of the conjunctival veins, at the corners of the eye and along the course of the recti muscles.

Ophthalmic examination in the early stage of the malady shows slight redness of the papilla, turgor of the central veins, and diminished calibre of the arteries. In more advanced cases the external half of the papilla is colourless, tending to white; and, in some cases, the papilla has a white appearance over its whole surface, and the arteries are pale, anæmic, and small. The venous network of the choroid may be engorged and redder than usual. The blue whitening of the pupil shows itself rather readily when the case is complicated with meningitis or cerebral congestion. Rheumatism, gout, diseases of the liver, spleen, stomach, and kidneys, and atheroma of the vessels, are somewhat frequent complications.

These amblyotic patients almost always have loss of appetite, spasmodic cough, vomiting, trembling of the hands, uncertain gait, irritability of temper, and cramps in the lower limbs. Their breath has an acid or alcoholic smell; they have an earthy colour, and in old persons there is often acne. In some cases there are weakness of the lower limbs, loss of memory, vertigo, etc., indicating grave changes in the spinal cord or in the brain.

Taking into consideration the sedative action of bromide of potassium on the nervous centres of reflex action, and its effect in reducing the action of the heart and lowering the temperature, and bearing in mind the construction of the retinal vessels observed by Lewizki to follow its use, Dr. Quaglino determined to try the effect of this drug in gradually increased doses. He began by giving a gramme per diem in 170 or 200 grammes of water, and increased the dose gradually till toxic effects began to appear. He relates seven cases thus treated; in some the cure was complete, in others the disorder was arrested, and in none was there a relapse. He concludes that, if bromide of potassium causes narrowing of the arteries and veins of the cerebral membranes, it ought to be useful in amblyopia maintained by descending neuritis and by retinitis arising from insolation, by rheumatic meningitis, and by lead poisoning. In weak and anæmic subjects, bromide of iron appears preferable; and quinia may be given with it when there is an indication of the origin of the disorder from malaria and paralysis of the ganglionic nerves.—*London Med. Record*, May 27, 1874.

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On Rhinoplasty by a Double Flap.

M. Ollier (*Gazette Médicale de Paris*, 1874, p. 202) refers to the hideous deformities produced in the nose as the consequence of syphilis, and states that the wretched results procured by the old methods of rhinoplasty have caused the operation to be almost abandoned. He suggests that a flap of integument taken from the deformed nose should be combined with the frontal flap. The first and most difficult step of the operation is to dissect the soft coverings of the nose, making a sort of bridge, free in the centre, and adherent at the extremities to the cheeks. A flap is then cut from the frontal region, at least six inches long, and encroaching on the hairy scalp; its pedicle corresponds exactly to the space between the eyebrows. In young subjects, M. Ollier elevates with it the periosteum, otherwise not. The flap is then reversed without torsion, so that the cutaneous surface becomes internal, and the raw surface external; it is slipped under the previously formed bridge of integument, and the two raw surfaces are fastened together to prevent retraction. When the point of the nose is absent he turns up the end of the flap, so as to replace it, and at this first operation he bestows no attention on the formation

of the nares or septum. After the operation the frontal flap first swells, and then unites to the deep surface of the nasal flap; the uncovered portion cicatrizes after granulation. It is well supplied with blood by the two frontal branches of the ophthalmic artery, which pass through its pedicle; the pedicle is never divided by M. Ollier, and thus the atrophy observed after other modes of operation is avoided. The further procedures consist in modelling the nose and preventing it from sinking down, and in forming the nares. Ollier has never observed bony formation from a periosteal flap. The periosteum has always remained fibrous, but it assists in giving firmness to the new nose. In a case where the point of the nose was destroyed, M. Dolbeau partially covered the raw surface of the frontal flap with integument taken from the cheek on each side. A similar process is recommended in Langenbeck's *Archiv für Klinische Chirurgie*, 1860, but Ollier claims precedence, as he communicated his ideas to Verneuil in 1858. The results of Ollier's operations, as shown by the photographs, appear satisfactory. The important feature in the operation is that the pedicle is not divided, and the flap therefore continues to be well nourished.

The osteogenetic power of the pericranium varies according to age, and in different animals; the bone being reproduced in lambs which had been trephined, whilst in the adult sheep, under similar conditions, no bony reproduction was observed.—*London Med. Record*, June 26, 1874.

On Extirpation of the Tongue after Ligature of the Lingual Artery.

Dr. Weichselbaum, assistant in the Klinik of Professor Podraski, in Vienna, has an article on this subject in the *Wiener Medizinische Wochenscrift*, No. 42, 1873. The arrest of hemorrhage in operations for cancer of the tongue is often most difficult. In order to readily reach the bleeding points, Syme and Sédillot divided the symphysis menti, and held the two halves of the jaw asunder. Regnolii made an incision from the chin to the hyoid bone, and then a second parallel to the margin of the jaw; the muscles and mucous membrane being divided, the tongue was drawn down through the wound. Billroth, having the same end in view (to facilitate the securing of the arteries), made an osteoplastic section, or cutting out of the middle portion of the lower jaw, a proceeding also strongly recommended by O. Weber, in cases where the disease is far back in the tongue. The objection to this is the difficulty of the subsequent union of the divided portions of the jaw. Czerny operated in 1870 in a case of cancer in the tongue on the left side. He first tied the left lingual artery, then extended the incision along the hyoid bone as far as its right lesser cornu, and afterwards made an incision from the chin to the hyoid bone; the soft parts were divided, the tongue drawn down through the wound, and the disease removed. Billroth has more recently operated without preliminary ligature of the lingual artery. He makes merely a curved incision along the border of the jaw, pulls down the tongue through the wound, and the disease, even when very far back, can be thoroughly removed, while the bleeding vessels can be securely tied. Bulow gave an account of nine cases operated on in this way, five with success. There is but little damage done to the soft parts, the operation is efficient, and provision is made for the discharge of matter forwards in place of into the trachea.

A large number of surgeons have attempted to perform operations on the tongue bloodlessly, either through the use of the ligature, the écraseur, or the galvano-caustic noose; or by the preliminary ligature of one or both the lingual arteries. So far as the first three methods are concerned, they are at the present time almost completely, and, as the author thinks, properly abandoned. At the most, the galvanic cautery is very occasionally employed. All three are open to the objections that one cannot be certain whether all the disease has been removed, and that they do not offer absolute security against bleeding either during or after the operation. The writer mentions a case of secondary hemorrhage which occurred in the practice of Professor Pitha. Nunneley, who advocates the use of the écraseur, saw the lingual artery spout in one of his five cases. Von Bruns has had bleeding after the use of the galvanic cau-

tery. The use of the ligature is very objectionable, on account of the great swelling it produces, and the subsequent presence, in the mouth, of a mass of gangrenous tissue

The preliminary ligature of the lingual artery reduces the hemorrhage in operations on the tongue to a minimum. The first occasion on which it was practised on account of extirpation of the tongue was by Flaubert, in 1833, and by Mirault, in 1835. The latter had the greatest difficulty in discovering the vessel. At the beginning of this century, however, Colomb tied the artery on account of aneurism. The operation was looked upon as so difficult that it was seldom undertaken by surgeons. Formerly the artery was sought for between its origin and the point where the posterior belly of the digastric crosses it. The author, however, prefers to look for it within the triangle formed by the two bellies of the muscle, and the lingual nerve running above and more superficial. In the first position, the artery is much deeper, covered by the hypoglossal nerve, and by several veins, which are liable to injury, while the superior thyroid and facial arteries arise rather close to it. The nerve, lying almost immediately over the artery, may be mistaken for it, and in any case it must be drawn aside. Sometimes the facial and lingual arteries arise by a common origin from the carotid; besides, it is undesirable to place a ligature so close to the parent trunk. These objections do not hold if the artery be exposed in the little triangle of Lesser, whose boundaries are those above mentioned. Here, close beneath the fibres of the hypoglossus muscle, the artery will certainly be found.

The steps of the operation are as follows: The incision through the skin should be made along the upper border of the hyoid bone, three or four centimetres long, and beginning a centimetre externally to the middle line. At the extreme angle a large vein is usually met with, and should be drawn aside. When the platysma is divided, the submaxillary gland appears; this must be drawn upwards after freeing its lower border; and then, just under its middle, may be seen the above mentioned triangle, bounded by the shining tendon of the digastricus below, and the hypoglossal nerve, running from below upwards and inwards superiorly. It must be borne in mind that in old people, in women, and in short-necked individuals, the submaxillary gland projects further downwards, and sometimes even covers the hyoid bone. Often the border of the mylo-hyoid muscle overlaps the triangle, and the hypoglossal nerve may also run very low down. In such cases these parts must be simply pulled aside, and on incising transversely the fibres of the hypoglossus muscle within the apex of the triangle, the artery will at once come into view. There is hardly any hemorrhage except when the capsule of the gland is being divided. This method of operating has been employed by Hüter about five times, and attributed to him in the *Deutsche Zeitschrift für Chirurgie*, vol. i. p. 587, but the writer asserts that it was previously employed by Professor Podraski, and that it is described in Pitha and Billroth's *Surgery* without reference to Hüter.

Dr. Weichselbaum then relates the history of four cases.

The author has collected thirty-seven cases of removal of the tongue after preliminary ligature of the lingual artery, with six deaths, or 16 per cent.; while of nine cases performed according to Billroth's osteo-plastic method, four died, or 44 per cent. But the number of these last is too small to form a proper comparison. The author points out that the absence of bleeding in the mouth makes the boundaries of the disease much more easy to recognize during the operation. When the disease has extended into the floor of the mouth, the author prefers Billroth's submental method, as the parts can be thoroughly drawn out, and the bleeding points secured without much trouble. When the disease is confined to one-half the tongue, it is probably only necessary to secure the lingual on that side, since the branches of the ranine artery do not anastomose in the tongue with those of the opposite side.—*London Medical Record*, June 10, 1874.

Osteoma of the Frontal Sinus.

J. Arnold reports in Virchow's *Archiv*, vol. lvii., two bony tumours of the anterior region of the skull, which are remarkable examples of what has been called by Virchow enostosis, or osteoma developed from the diploë. Both tumours agreed almost entirely in their situation and mode of development, but differed in the rate of growth, in that one only of them represented an advanced stage. Both had their origin at the posterior and lower part of the wall of the frontal sinus, where the ethmoid bone approaches the part (here alone was there a close connection between the tumours and the wall of the sinuses), and thence grew into and distended the sinuses. One of them broke through the wall at separate points above, below, and in front; the large projections of the other pressed on the orbits, nasal cavities, and skull, destroying the anterior lamellæ of the frontal bone, so that the only guide to its origin in the frontal sinus was the presence on it of some mucous membrane with ciliated epithelium. Both tumours had a thin layer of connective tissue on their outer surface. The smaller one consisted entirely of ivory-like masses, while the larger one had this structure on the outside only, the interior being formed of a spongy tissue. Arnold believes that in these two cases, and in twelve others of which he has been able to find records, the tumours must have either been developed from the endosteum by the direct formation of bone substance, or bony transformation of enchondromata which themselves had their origin from the endosteum or from the remains of cartilage. In one of Arnold's cases, the patient was only twenty-three years of age; and Virchow has already observed that the occurrence of the disease in early life points to its origin, in many cases, in disturbance of the formation of bone.—*British Med. Journal*, Feb. 14, 1874.

Tracheocele, or hernia of the Trachea.

Dr. Devalz (*Gazette des Hôpitaux*, Nov. 8, 1873) lately read a paper on tracheocele at the Surgical Society of Paris. He affirms that this disease has never been described before, and he therefore dispenses with any historical inquiries. Pneumocele or hernia of the lung was first described by Morel-Lavallée in 1847, and a very interesting *résumé*, with some additional cases, has lately been published by Dr. Cockle in the *Medical Times and Gazette*, Jan. 4 and 11, 1873. Bizot, in 1863, published a case of hernia of the frontal sinus—the bone having been destroyed by syphilitic caries. In this case a small red tumour, formed by the Schneiderian membrane, was seen to protrude on expiration. After explaining the manner in which pneumocele takes place, Dr. Devalz points out that, if such a condition can arise in the most mobile parts of the respiratory passages, it will be readily understood that a hernia can develop itself in another part of the tract. The following is the case on which Dr. Devalz bases his article.

Mr. V., a tall, fairly nourished man, came under observation at Eaux Bonnes in September, 1872, on account of a large swelling in the front of the neck, which he had been told by a medical practitioner was a goitre. For many years he had been subject to attacks of bronchitis, and at these times had suffered severely from cough. He had seen many physicians, and several of these had agreed in the diagnosis that he was suffering from a tubercular affection temporarily arrested. He stated that he had always had a small tumour in front of the trachea, but in 1863, after his cough had been particularly troublesome, the "goitre" became much larger. Previously to this, in spite of the small swelling, the neck had been particularly small, so much so indeed that he found it extremely difficult to obtain a sufficiently small cravat; but in 1863 the paroxysms of cough were very violent and frequent, and the tumour gradually increased till it attained the size it presented at the time the report was sent in. The timbre of his voice was at this period (October, 1873) very peculiar, "each syllable being accompanied with a soft murmur which prolonged the true laryngeal sound, and surrounded it with a kind of sonorous shadow. The sound "*ouvouvou*" (pronounced according to the French language), in a very low tone, gives a good idea of this whispering noise."

On stripping the patient, the upper part of the neck was seen to be almost abnormally small, whilst its root, without presenting a defined tumour, was abnormally widened. On applying the hand to the lower part of the neck, it was not found to have the consistence of a solid tumour, but to yield the sensation of an empty hernial sac, the volume of which varied whilst the patient was speaking. In forced expiration, in coughing, and in blowing the nose, a bilobate tumour perfectly resembling a goitre was formed at the root of the neck. These tumours were pyriform and extended obliquely to the clavicles the right one reaching 2 or 3 centimetres lower than the left. On compressing the trachea on a level with the tumour (before expiration) the fictitious goitre, no longer existed.

Tactile examination could not discover the exact origin of the tumour in the trachea. There was an absence of hardness, redness, or pain in the tumour, and it had no prominences. There were no dilated vessels, and no arterial pulsations. Laryngoscopic examination failed to detect the orifice of communication between the tumour and the trachea.

On auscultation over the tumour a sound analogous to that which is normal in the trachea was heard. The chest was well formed, and, on examining the lungs, the sounds over nearly all the chest were found to be perfectly healthy, although the vesicular expansion was a little weak, and the respiratory murmur feeble and slightly veiled. On the right side, however, at the very summit and beneath the clavicle, there was the most characteristic amphoric breathing and the most evident pectoriloquy. These latter signs, however, entirely disappeared on auscultation, when the lower part of the neck on a level with the tumour was firmly and continuously compressed. It was evident, then, that on the right side the morbid signs were due to the contiguity of the tracheocele and the lung, and that these phenomena were confined to the right side, because the right lung, as is well known, rises in the normal condition higher than the left, and because the tracheocele was smaller on the left side.

On learning the nature and harmlessness of his complaint, the patient, who for a long time had withdrawn from the world, laid aside his anxiety, and recovered the serenity of mind which ought never to have been clouded.

The etiology of the case may be explained as follows. There had always been congenital weakness of the tracheal rings between which the soft parts had passed; repeated attacks of coughing ultimately converted this simple primitive depression into a true hernia, manifested externally by a bilobate tumour. The marked disproportion of relative capacity between the well-formed lungs and the abnormally small neck constituted another factor in the production of the tracheocele. As the weight of a tumour of gaseous nature does not explain its descent, the cause of this phenomena must be sought elsewhere, and it will be found in the influence of expiration. When, in coughing, the current of the column of air becomes arrested by the approximation of the vocal cords, the air is forced downwards, and the mucous membrane being pushed through the weak spot, the tumour, following the direction given by the determining effort, passes downwards. The feebleness of the respiratory murmur is explained by the loss which the column of inspired air is subjected to in furnishing the cavity of the hernia. The following are the points of distinction between goitre and tracheocele, and the two affections can only be confounded by inattentive or uninformed observers.

Goitre.	Tracheocele.
1. *Form.*—It commonly has a bi- or tri-lobate form, is sometimes marked by prominences, and occasionally has large vessels on its surface.	1. *Form.*—It has a pyriform contour, and has neither prominences nor vessels on its surface.
2. *Consistence.*—It has a greater or less density.	2. *Consistence.*—It has no density at all.
3. *Permanency.*—The tumour may rise and fall in respiration, but is always present.	3. *Permanency.*—The tumour may be made to appear and disappear.

Goitre.	Tracheocele.
4. *Dyspnœa.*—When suffocation threatens, it is a very serious symptom.	4. *Dyspnœa.*—The breathing is never seriously affected.
5. *Voice.*—There is no change in the voice.	5. *Voice.*—Vocal sounds are accompanied by a peculiar whisper.

The author remarks, in conclusion, that "tracheocele appears to be an affection free from any serious danger," and he believes that "it will be frequently met with if goitres (the study of which, it must be admitted, is generally neglected) are examined more carefully."—*London Med. Record*, Dec. 3, 1873.

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Punctured Wound of Kidney.

Dr. J. J. Castellanos reports (*New York Med. and Surg. Journ.*, July, 1874) the case of J. M., æt. 36, wounded Feb. 28th, in right renal region, the wound ranging from outwards, inwards, and obliquely downward, and producing severe external hemorrhage. From the width and extent of the slits and rents which the puncturing instrument seemed to have made upon his vest, shirt, undershirt and pants, it was evident that the thrust had been directed quite vigorously, and it was to be presumed that the wound was a deeply penetrating one, and therefore of a serious nature. Dr Wiendahl was called to see the case later in the morning, and reports that patient had voided darkened bloody urine at 6 o'clock, *i. e.*, 4 hours after the morning, and continued to void similarly colored urine for three days. On the fourth day, having had castor oil administered to him to relieve constipation, which had been induced by opiates and styptics, patient had a recurrence of active, pure hemorrhage, of nearly a quart in quantity. This hemorrhage persisted, though in smaller quantity, for four or five days, after which another hemorrhage, not as copious as the former, set in. This persisted also, with some intermission, for several days. The date of last profuse hemorrhage was February 28th, *i. e.*, twenty days after the infliction of the wound. Large clots were then voided, and prolonged syncope followed, so severe, indeed, as to lead us to surrender all hopes of recovery for our patient. This, however, was the last hemorrhage; patient continued for several days to void discoloured urine, with now and then small coagula, which disturbed the patient exceedingly, inasmuch as he had a stricture of the urethra, and had been suffering for several years past from chronic cystitis and membranous urethritis.

This case was diagnosed punctured wound of the kidney, the knife having gone through both the cortical and tubular substances into the pelvis of the kidney, causing the severe hemorrhages, the flow of which the patient was sometimes made aware of by the gurgling and peculiar "opening of a stop-cock" sensation which he describes, as the blood poured from the right ureter into the bladder.

Dr. Castellanos finds his case to be peculiar by the absence of two important symptoms, namely, external escape of urine from the wound, and retraction of corresponding testicle, the burden of explaining which he declines to assume, and leaves it to those whose ingenuity, experience, or inclination would best qualify.

Perfect recovery ensued.

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On Retroperitoneal Hernia, and the Anatomy of the Peritoneum.

Professor Waldeyer, of Breslau, republishes in Virchow's *Archiv*, Band lx. Heft. 1, a pamphlet originally written for private circulation in 1868.

Retroperitoneal Hernia.—In the post-mortem examination of a robust man, who died of double pneumonia, at the age of forty, there was found a perfectly developed retroperitoneal hernia, which comprised the whole of the small intestines. Since the publication of Treitz's classical monogram (*Hernia*

retroperitonealis, ein Beitrag zur Geschichte der innern Hernien, Prag. 1837), but few such cases have been described.[1] In this case the colon occupied its normal position. The great omentum, rather fatter than usual, concealed the small intestines; when this was reflected, it was seen that the coils of bowel were inclosed in a rather thick whitish sac, which included the whole mass of the small intestine. This sac had both the appearance and the structure of serous membrane, and was closely connected on all sides with the parietal peritoneum of the posterior wall of the abdomen, as well as with the peritoneum of the ascending and descending colon, its structure and texture being identical. It had numerous vessels of its own, with ramifying fat; it was quite transparent, and free from any signs of peritonitis. A median incision made it easy to remove the mass of intestines. The mesentery was quite normal. From the interior of the sac, it was easy to discover that its neck (*Bruchpforte*) corresponded to a point very nearly opposite the cæcum; the lower end of the ileum passed through this, and dragged upon the cæcum. The opening was nearly circular, as large as a two-thaler piece: its edges slightly thickened. The inferior mesenteric vein arched over the upper edge and free border of the opening. There were no signs of strangulation, and the coils of bowel could be easily drawn into and out of the sac. This case was a complete retroperitoneal hernia of the kind described by Treitz (*loc. cit.*, p. 27) in his fifth case. The bowel had forced its way into the duodeno-jejunal fossa, and had gradually pushed the right fold of the descending mesocolon before it, and thus formed a sac for itself. The neck of the sac had originally lain higher, at the junction of the duodenum with the jejunum, and had thus been forced lower and lower with the weight of the mass. Waldeyer thinks the inferior mesenteric vein might easily have given rise to a constricting ring at the neck of the sac.

The Anatomy of the Retroperitoneal Fossæ.—The author adheres to the original and distinctive names of (1) fossa duodeno-jejunalis, (2) fossa intersigmoidea, and (3) fossa subcæcalis of Huschke and Treitz, in preference to the longer appellations of Wenzel Gruber (*Medicinische Zeitschrift Russlands*, 1859, No. 8). He has carefully examined 45 bodies of both sexes, varying in age from twelve weeks (of intra-uterine life) to sixty years. In 18 bodies the fossa duodeno-jejunalis was well developed, without hernia, in one with complete hernia; in 8 it was obliterated, yet clearly recognizable; in 18 it could not be demonstrated—of these, however, 10 were very young embryos, in whom the pouches were yet undeveloped. In 34 bodies the fossa intersigmoidea was well developed, without hernia; in 4 it was obliterated, but clearly demonstrable; in 7 it could not be demonstrated. This form is therefore the commonest; the fossa subcæcalis is much rarer. As regards adults, he finds the percentage in 250 subjects to be nearly as follows: fossa duodeno-jejunalis, 73 per cent.; fossa intersigmoidea, 84–85 per cent.; fossa subcæcalis, 30 per cent. These numbers agree very nearly with those of Treitz and Gruber. The fossa duodeno-jejunalis is practically the most important of the peritoneal pouches, as it most frequently gives rise to internal herniæ. Its site is exactly the part where the duodenum joins the jejunum; the bowel lifts itself from the vertebral column, and receives its own mesentery. It is funnel-shaped, and its blind extremity extends outwards on the left border of the duodenum, lying deep between this and the aorta. Gruber (*Archiv für Anatomie und Physiologie*, 1862, and Virchow's *Archiv*, Band xliv.) has described three cases of this fossa being situated on the right side, with a common mesentery for large and small intestine. In one of these cases there was a retroperitoneal hernia on

[1] The author refers to Gruber, *Petersburg. Medizin. Zeitschrift.*, 1861, and Virchow's *Archiv*, Band xliv. S. 215, for reports or reference to thirty-seven cases; also to three described by Eppinger lately (*Prager Vierteljahrschrift*, Band cviii. 1870); which, with the one above, made forty-one cases of retroperitoneal hernia already recorded. He does not seem to have noticed Dr Biesiadecki's cases (see a report by Dr. Pye-Smith, in *London Medical Record*, vol. i. No. 15, p. 233) or Kundrat (referred to in *London Medical Record*, vol. i. No. 13, p. 199); nor is it clear that he includes Dr. Pye-Smith's two cases in *Guy's Hospital Reports*, 3d series, vol. xvi.—*Rep.*

the right side. Its usual size is about that of the top joint of a finger, but it may reach dimensions which will easily admit a coil of intestine 1 or 1½ foot long. If traction be made on the first part of the jejunum, in a direction forwards, and to the right, the two peritoneal folds round the opening of this fossa will be seen like the plicæ Douglassii. [Two illustrative cases are appended.] This fossa may sometimes be divided into two, as in a male aged forty, dissected by Waldeyer; and sometimes there is another little pouch (*Vorfusche*) in front of it. [A case is appended, in a male aged forty-five, in which this anterior pouch would conveniently hold four or five inches of intestine.] The duodeno-jejunal fossa, as noted above, is often quite obliterated.

The fossa intersigmoidea has had several discoverers (Hensing, Treitz, and W. Roser), and is situated in the mesentery of the sigmoid flexure. Its opening is in the lower fold of the mesentery, and the fossa lies between the two folds of mesentery, very close to the sigmoid flexure. If the latter be raised, so that its mesentery is put on the stretch, the opening of the fossa is easily seen, and, in the author's experience, this is the most constantly present of all the peritoneal pouches. Treitz says that the inferior situation of the opening prevents herniæ from occurring at this spot. The opening of the fossa is generally slit-like, with a sort of valve formed by the upper border projecting—the fossa usually admits the tip of the index-finger. Its size varies. [Two cases are given, in one of which three fingers could be contained—in the other the opening was 2 by 1 inches, nearly.] It is very common to find a canal (½ to 1 inch deep) instead of a fossa—or there may be two such canals or pouches. [Illustrative cases are given.] The edges of the fossa are often very hard and thickened.

The peritoneal pouch of the cæcum or so-called fossa subcæcalis (Treitz) is very rare. Yet two or three such pouches are described by Huschke, Treitz, Luschka, Langer, Schott, and Gruber. The author, from investigations made on the bodies of about 40 adults and 25 new-born children and embryos, concludes that there are at least four such pouches belonging to the cæcum—viz., (1) a fossa ileo-cæcalis superior (Luschka); (2) fossa ileo-cæcalis inferior (Huschke)—recessus ileo-cæcalis (of Luschka); (3) the fossa cæcalis (Huschke); and (4) the fossa subcæcalis (Treitz). A description of these is appended, with illustrative cases; together with the author's views as to the development of these pouches in the embryo.—*London Med. Record*, June 17, 1874.

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On Angioma of the Glans.

Dr. Parona describes (*Giornale Italiano delle Malattie Veneree e della Pelle*) the case of a boy, eight years old, in whom, when he was a few days old, the large development of the glans attracted the attention of his parents. Some months after birth, he passed some bloody filaments with the urine. At the age of three years, the glans had become very large towards the frænum, and discharged blood. Dr. Larghi proposed decapitation of the penis, declaring the disease to be angiectasis. Dr. Bottini believed that there was a small encysted calculus; but nothing of the kind was found on operation.

At a later period, Dr. Parona, agreeing in the diagnosis of angiectasis, cut away the part of the glans where the tumour existed. The expectation of a radical cure, however, proved fallacious, since at the inner side of the part operated on, and on the cicatrix, red elevations as large as pins' heads budded forth. The application of caustics was unsuccessful, and the new growth continued. Dr. Parona therefore determined to amputate the entire glans. Before the operation, the penis increased in circumference towards the extremity, which was as large as an adult thumb; the prepuce was red, and large serpentine veins ran between the mucous and cutaneous layers. At the orifice of the urethra, and towards the seat of the frænum, were irregular enlargements of fleshy consistence, and resembling a mass of varicose veins. The urethral mucous membrane, as far as it could be seen, was red and granular. On the glans were sky-blue spots dotted with red; it was of natural consistence, and

did not manifest fremitus or pulsation; and became intensely red when the boy stood long on his feet. The corpora cavernosa, at the end next the glans, were small.

On the eighth day the wound was healed, and the child passed urine. After a time the urethral orifice contracted so much that it was necessary to have recourse to gradual dilatation.

The glans having been divided longitudinally, the extremity of the corpora cavernosa was seen to be well developed in proportion to the age of the boy, and unaltered. In the parenchyma of the glans, both at the circumference and in the centre, there were many more or less circumscribed points where the tissue was of less density, and redder, and which, when emptied of blood, appeared spongy. The urethral mucous membrane was covered in great part with reddish granulations of greater or less size. Microscopic examination showed well-marked characters of angioma to be present.—*London Medical Record*, May 27, 1874.

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Total Transparency in Hydrocele.

In the *Gazette Médicale* of May 9, M. Nicaise draws attention to those cases of hydrocele in which transparency exists throughout its entire extent, no opacity indicating the position of the testicle. Although its occasional occurrence had been noticed by prior writers, the fact was first brought prominently forward by M. Marcellin Duval, first in Bouchardat's *Annuaire de Thérapeutique* for 1858, and then in the *Gazette des Hôpitaux* for June, 1868. During the present year, M. Ohrond, a pupil of M. Duval, has made it the subject of his inaugural thesis. M. Nicaise refers to a case which came under his care at the Pitié Hospital in 1873. A patient, the subject of blenorrhagic subacute epididymitis, exhibited a tolerably abundant effusion into the tunica vaginalis, accompanied by total translucidity. This was the more remarkable, since by palpation the dimensions of the testis and of the epididymis, which were considerable, were easily ascertained. The quantity of translucid liquid, which was removed by aspiration, scarcely equalled in volume the solid mass that remained within the scrotum. A young infant formed the subject of another case, the tumour, composed of a simple hydrocele of the tunica vaginalis, being of the size of a small walnut. There, too, the translucidity was complete, and, unless it had not been known to have done so, the testicle might have been supposed never to have descended. According to M. Duval, this occurrence is chiefly but not exclusively observed in idiopathic hydrocele. M. Nicaise believes the phenomenon somewhat depends upon the complete reflection which takes place from the serous surface of the tunica bathed in the liquid; and it is consequently met with when this membrane has undergone but little alteration from prolonged inflammation. The light which is employed for examination of a hydrocele should be varied in its position, so that it should traverse all parts of the tumour. Its intensity may also influence the result of the examination, as, when this is considerable, opacities may be discovered that elude a duller light. M. Nicaise concludes as follows:—

"Thus, then, in certain cases, a tumour consisting of a solid mass and of liquid may appear exclusively liquid; while in other cases, which occur much more frequently, the quantity of the liquid appears much more considerable than it really is. Palpation, therefore, should always be employed in hydrocele as a corrective of the indications furnished by the examination with refracted light. Without this, we are liable to believe that the testis is placed at a greater distance from the parietes than it really is, and run the risk of wounding it on making a puncture. From what has been said, it will be seen that the examination of the translucidity of hydrocele renders our diagnosis more precise, since it may furnish indications as to the condition of the serous membrane, the thickness of the parietes, and the translucidity of the liquid. These indications vary accordingly as the translucidity is more or less complete, or total."—*Med. Times and Gaz.*, May 16, 1874.

Penetrating Gunshot Wound of the Pelvis, with Perforation of the Bladder and Rectum.

MM. Geoffroy and Delaissement report (*La France Médicale*, December 27, 1873) the following case: On September 6, 1870, while in camp near Paris, a garde-mobile, named Caillaux Pierre, was struck in the right groin by the bullet from a Chassepot rifle, accidentally discharged by a comrade at less than two yards' distance. The ball passed above Poupart's ligament, through the bladder and rectum, and emerged in the left buttock, near the anus. For some days the patient suffered from peritonitis, and was unable to retain either water or feces. The water passed entirely by the wound in the buttock; the greater part of the feces also escaped by the same channel. For some days he was in danger, but was able to sit up within a fortnight, and three weeks after the accident he was removed to his own home. At that time feces and water flowed continuously from the wound. The original channel of the urethra was re-established with difficulty, and gradually the wounds closed; the water then passed almost entirely by the urethra; a small quantity by the anus. Six months after the injury he resumed his occupation as a hairdresser, and he then had complete command over both rectum and bladder, and the only drawback to perfect health was the passage of a few drops of urine by the anus each time he makes water. The patient has since married, and is now in robust health. He says that he performs the duties of a husband very well, but he adds, "L'éjaculation n'a pas lieu par le canal de l'urèthra. Le sperme sort par l'anus."—*Edinburgh Med. and Surg. Journal*, March, 1874.

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On the Passage of Hairs from the Bladder.

Dr. Sewell, in the *Canada Medical and Surgical Journal* for October, 1873, describes the case of a female child who passed hairs with her urine and drew long hairs from the mouth. She was three years and nine months old. She had been under observation from May to August, 1873, in the Female Orphan Asylum at Quebec. The little orphan was very backward in speaking, of feeble intellect, and of dirty habits, passing everything on the floor in a standing posture. She suffered from frequent micturition, and urinated frequently with more or less pain. Each discharge of urine was found to contain a number of hairs varying from one to seven inches in length. In August they were estimated at one dozen daily. Each hair exhibited, under the microscope, a well-defined bulb, and all the characteristics of ordinary hair. Generally the hairs were fine and of a light colour, occasionally darker and coarser. There was no calcareous matter about them. The urine was of specific gravity 1018, and free from mucus, pus, or blood.

Dr. Sewell says that his case, though an uncommon one, is so far not unique. There is, however, another feature, which, added to the above facts, makes it really, so far as he can discover, perfectly unique. The child is constantly drawing similar hairs, from eight to ten inches in length, from her mouth. These are frequently coated with bloody mucus. He has never seen her draw any from her mouth, but some of the lady visitors have; and he implicitly relies on the report of the matron.

In commenting on this case Mr. John Croft states that the author is quite right in stating that his case is not unique in passing hairs in the urine, as there are now several cases on record, five females and three males. 1. Hildanus, in a letter to Horstius (Horstii *Opera Medica*) relates the case of a woman aged 60, who was under his care from 1616 to 1620, and appears to have been the subject of a dermoid cyst. 2. In the *Philosophical Transactions*, p. 700, there is an abstract of a case of Dr. J. Wallace's. A gentleman passed long hairs during his lifetime, and after death a soft concretion was found in the bladder. 3. In 1733 Mr. Powell communicated to Sir Hans Sloane the particulars of a widow lady, who passed hairy crustaceous substances in her urine, which was whitish like whey. 4. In reply Sir Hans Sloane gave an account of a brewer who suffered from the passage of long hairs matted and woven together, with

little or no calculous matter attached to them. 5. Dr. W. Henry, in the tenth volume of the *Medico-Chirurgical Transactions*, 1819, has described the case of a middle-aged man who passed hairs varying in length from one-tenth of an inch to one inch. He conjectured that the hairs had been attached to the bladder or some of the urinary passages; but there was no positive evidence of this. Dr. Wollaston examined some of the hairs from Dr. Henry's case, and found that they did not differ chemically from ordinary hairs, but they differed mechanically in not possessing the roughness in one direction on the surface, upon which the felting property of every kind of common hair depends. 6. Delpech, in his *Chirurgie Clinique*, 1828, narrates the case of a young married woman, twenty-seven years of age. She passed hairs, and he removed by the urethra masses of hair, scalp, bone, and teeth. He believed it to have been the result of a conception, the cyst to have been situated in the "*ad uterum*," and to have opened into the bladder. It was obviously a dermoid cyst. 7. In the *Lancet*, of November 10, 1860, Mr. Hall has detailed the case of a married woman, aged 60, who suffered from the passage of hairs, and from a concretion which he extracted. Her case was probably one of dermoid cyst, though Mr. Hall conjectured that the hairs had grown from the walls of the bladder. 8. Dr. Fuller has described an interesting case in the *Transactions of the Pathological Society*, for 1870. A married lady, aged fifty, suffered for several years before a cure was effected. It was determined, with reason, that a dermoid cyst had been the cause of her troubles.

With regard to the fact of the hairs drawn out of the mouth, Dr. Sewell does not state whether he explored the mouth or made any physical examination of the chest, or whether the child was the subject of cough. A case of dermoid cyst in the lung, described by Dr. Cloëtta (Zurich) is of interest as bearing on this part of Dr. Sewell's case; and, therefore, I give an abstract of it from Schmidt's *Jahrbücher*, vol. i. 10. A female, aged twenty, was the subject of pulmonary tuberculosis, and expectorated large quantities of hairs. The lower lobe of the left lung was found after death to present a cyst in which hairs, fatty matter, cartilage, and bone were imbedded. This cyst opened into a large cavity on the lung, which was occupied by dead hairs, epithelium, and fat.—*London Medical Record*, Jan. 21, 1874.

On Traumatic Aneurism of the Dorsalis Pedis Artery: Anomalous Course of the Anterior Tibial.

At the meeting of the Société de Chirurgie de Paris on May 6, 1874, M. Azéma, of the Ile de la Réunion, communicated a rather unusual case. A man, seventy-one years of age, slipped and twisted his foot. This caused the formation of a small tranmatic aneurism, only of the size of a nut, on the dorsalis pedis artery just below the annular ligament. After a few months the tumour had attained the size of a pullet's egg. There was a marked bruit. It was so painful as to prevent the patient from sleeping. Compression of the femoral artery stopped the pulsation and bruit.

It was determined to tie the anterior tibial in the lower third of the leg, but on cutting down in this situation M. Azéma could find no artery, though he met with two veins and the nerve. As the course of the artery was anomalous, he recommenced the operation in the upper third of the leg, and there he exposed an artery, pressure on which stopped the pulsation and bruit of the aneurism, and the ligature of which cured the patient. M. Azéma concludes that the dorsalis pedis artery in this case was furnished by the anterior peroneal. Another speaker related an incident which happened in an anatomical examination at Paris, where the candidate, having to tie the anterior tibial artery, could find only a single vein and no artery at all.

[We must confess to some doubts, both as to the propriety of the surgical treatment in this case, and as to the accuracy of the anatomical details. With regard to the former, surely a small traumatic aneurism, the symptoms of which were immediately controlled by compression of the femoral, and which was subcutaneous, might have been treated by some less dangerous operation than the ligature of the anterior tibial artery at the age of seventy-one. Intermitting

digital pressure on the sac and on the artery leading to it, is ordinarily quite sufficient in such cases, without exposing the patient to any pain or risk. Yet, if we understand the account aright, the surgeon resorted at once to the ligature, without even giving a trial to any milder measure.

As to the anatomy, if the dorsalis pedis were furnished by the anterior peroneal, which is a branch of the peroneal from the posterior tibial at the back of the leg, how could its pulsation be stopped by tying the anterior tibial on the front of the leg? Allowing that the artery was really absent in M. Azéma's operation, and in the operation on the dead subject which was referred to in the debate (and there is no strict proof that it was really absent in either case), it would seem more probable that it was merely an accidental deviation of the anterior tibial from its usual course. The dorsalis pedis is known to be often deflected outwards from the line which it ordinarily follows, and a similar deflection might in this case have occurred at a higher point in the leg.—T. Holmes.]—*London Medical Record*, July 1, 1874.

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On Ligature of the Internal Iliac Artery, for Fungus Hæmatodes of the Sacro-iliac Synchondrosis.

Dr. Orpizzi relates (*Gazetta Medica Italiana Lombardia*) a case in which the internal iliac artery was tied by Professor Porta at Pavia, on July 9, 1873, in the person of a woman forty-five years old, who had a pulsating tumour in the right buttock which had existed for several months, without any known cause. There was no pain in moving the limb, nor any sciatic pain. The pulsation was accompanied by a bruit which is not described further than as a "souffle very perceptible to the ear." Compression on the aorta or common iliac stopped the pulsation and bruit at once. There were no tumours elsewhere. No hesitation was experienced in the diagnosis of aneurism. After an ineffectual trial of injections the artery was tied—for the first time at Pavia. Little difficulty was experienced in the operation, which lasted about half an hour, and was done without chloroform, the patient submitting very quietly. However, acute peritonitis soon set in, and she died in forty hours.

The tumour was then found to be cancerous and not aneurismal, springing from the innominate bone around the sciatic foramen, and implicating several of the large branches of the gluteal artery.

[This error in diagnosis is one very difficult to avoid. Guthrie's, Moore's, and other cases will at once occur to the remembrance of the surgical reader. The possibility, nay the probability, of such an error furnishes an additional motive for avoiding so dangerous an operation as the ligature of the internal iliac as long as possible.—T. Holmes.]—*London Med. Record*, June 17, 1874.

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On Partial Fracture of the Tibia in an Adult.

A case of partial or "green stick" fracture of the tibia, occurring in a man forty-eight years old, is recorded by Dr. Menzel, of Trieste, in the *Gazetta Medica Italiana Lombardia* for March 28. This injury is by far most common in children. Dr Menzel says that, in sixty cases observed during life, the bones of the forearm were in nearly all the seat of injury.

Of partial fracture in the adult, Gurlt has collected seven cases; in six of which the femur was affected, and in one the radius and ulna. Dr. Menzel describes his case as follows:—

Antonio Gullich, aged forty-eight, was knocked down by a cart loaded with stone, on December 4, 1873. One of the wheels passed over his left leg. He was carried to the hospital; and on the inner side of the leg there was found a transverse lacerated wound, with greatly crushed edges. There was no dislocation, abnormal mobility, or crepitus; the diagnosis was contusion without fracture. On the following days, the part became swollen; and on December 9, there was distinct dulness in the lower lobe of the left lung, with rusty sputa. On introducing the finger into the wound, the inner angle of the tibia was found to be denuded, but no fracture could be detected. There was, however,

some elastic mobility of the bone at the seat of fracture. His general condition became worse; the presence of pneumonia removed all hope of saving him by amputation, and he died on December 23, nineteen days after the injury.

At the necropsy, the ordinary appearances of pyæmia were found. The left tibia was partially fractured between the inferior and middle thirds, at a part corresponding to the cutaneous wound. About seven-eighths of the periphery of the tibia were divided transversely; the remaining eighth, corresponding to the inner angle, was perfectly intact, presenting not a trace of fissure. The inner angle corresponded precisely with the external wound. There could be no doubt that, when the injury was inflicted, the wheel came into contact with the inner angle of the tibia, and that the bone was broken on the opposite side in the same way as a stick bent over the knee breaks on the convex and not on the concave side. The fibula was not injured.—*London Med. Record*, May 27, 1874.

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Resection considered as a Remedy for Abduction of the Great Toe—Hallux Valgus—and Bunion.

Dr. A. Rose, Physician to St. Francis Hospital, New York, reports (*Med. Record*, April 15, 1874) five cases of hallux valgus successfully operated upon by resection. Frequently the great toe of aged persons is found in the position of abduction—abducted outward from the median line of the body. This abduction has also been called hallux valgus, being analogous to "pes valgus" and "genu valgum," all of which are outward distortions, or deformities due to abduction. Hallux valgus is a kind of incomplete luxation, and is in rare cases the result of an abnormal process of growth. It is observed, however, that the deformity does not generally begin until the body has ceased growing. In a number of cases it is the result of an arthritis—usually of a gouty character—or, according to Hueter, of a panarthritis urica, which attacks almost always the first metatarso-phalangeal joint. In most cases, however, abduction of the great toe is caused by the pressure of ill-made and ill-fitting boots or shoes. If the broad expanse of the heads of the metatarsal bones is forced into a narrow boot, a pressure is brought to bear both upon the great and little toes, resulting in the formation of a corn on the metatarso-phalangeal articulation of the little toe, while the great toe, on account of its greater lateral mobility, yields to the pressure upon its distal extremity, and becomes abducted, occupying a position upon the dorsal or under the plantar surface of the next toe.

Hallux valgus always causes a portion of the capitulum metatarsi to be removed from contact with the phalangeal articular surface, thus inciting a process of hyperplasia on that portion of the articular surface which is relieved from pressure. This condition is followed by a thickening of the synovial membrane, with disintegration and shrinking of the cartilage, so that, in course of time, all the parts of this first and most important of the metatarso-phalangeal joints may become affected (panarthritis).

The head of the metatarsal bone now forms a remarkable protuberance, which is still more enlarged by a bony proliferation of the bony tissue, caused or promoted by the continued pressure upon, and irritation of, the affected joint. Froriep described this affection as an exostosis of the great toe, after the proliferation of the bony tissue has taken place. In most cases, however, there exists only expansion of the bone, and rarely exostosis.

The continued pressure of the boot upon the proliferating articular head may produce a bursa over the enlarged bone, which frequently communicates with the joint. The bursa itself may, also, in consequence of continued irritation, especially through cold, become the seat of an inflammation, followed by ulceration and the formation of bursal fistulæ, which are very difficult to heal, and which may, by perforation, cause an inflammatory suppuration of the joint, with all its evil consequences.

Hallux valgus, like varicose ulcers of the leg, is principally met with among the labouring class, and, according to my experience, medical aid is not sought until the disease is so far advanced as to render walking very difficult; for the

poor labourer does not apply for the usual orthopædic treatment as long as he is able to work.

Our experience proves this operation to be free from danger, recovery having taken place in all the cases in a short time, through the use of the permanent warm-water bath.

The operation consists in making a short longitudinal incision over the projecting portion, down to the bone. The soft parts and tendons are raised from the surface of the bone, and the head is excised. For this purpose the chain-saw is to be preferred to the bone-cutter. The hemorrhage is usually slight, especially when Esmarch's bandage is used. In order to permit the free escape of the secretions, the wound is left open and the foot is placed—generally after twenty-four hours and sometimes sooner—in a water-bath having a temperature of 90° Fahr. After about two weeks the warm bath is replaced by warm-water fomentations. The wound rapidly fills up with granulations; the great toe, somewhat shorter, becomes straight without any assistance, and a firm tissue is formed at the point of resection between the toe and metatarsal bone, while the weight of the body can be well supported by the uninjured plantar surface. Suppuration of the sheaths of the tendons has never occurred, and only in the one case of suppuration of the joint did we have a small circumscribed phlegmon and abscess on the dorsal surface of the foot, which, however, having been opened, speedily got well.

Amputation of the great toe has frequently been made for hallux valgus, but when amputation at the joint (exarticulation) is practised, a cicatrix usually remains on the head, which causes great pain when it receives the pressure of the boot; while amputation, including the head of the metatarsal bone, deprives the arch of the foot of an essential support.

In short, my experience in resection of the joint in cases of hallux valgus leads me to consider this operation preferable to amputation and to any form of orthopædic treatment in old and extreme cases. I must, therefore, regard resection as a valuable addition to our surgical treatment of these unfortunate cases.

Résumé:—

1. Resection of the head of the first metatarsal bone for abduction of the great toe is, according to our experience in St. Francis Hospital, a safe operation, when, as after-treatment, submersion in warm water is adopted.
2. Resection is equally safe as, and furnishes a more useful limb than, amputation.
3. Resection in old and obstinate cases of hallux valgus is to be preferred to orthopædic appliances.
4. Finally, resection, properly made, leaves the limb without apparent mutilation, and in a condition as useful as the healthy and sound foot.

On Intra-buccal Resection of the Inferior Dental Nerve after Paravicini's Method; Recovery.

Dr. Mosetig-Moorhof, of Vienna, says (*Wiener Medizinische Wochenschrift*, March 21, 1874) that the various methods for the division of the inferior dental nerve, which have been proposed in cases of severe neuralgia, are as follows. The vast superiority of the process invented by Paravicini will be at once perceived.

1. Division of the cheek through its entire thickness, at a spot corresponding with the anterior edge of the ramus of the jaw, without dividing the mucous membrane.
2. Division of the cheek at a spot corresponding with the sigmoid notch, in a direction upwards.
3. Division of the soft parts over the posterior border of the ramus of the jaw, in a direction from behind and below, inwards and upwards.
4. Removal of a portion of the angle of the jaw.
5. Trephining the ramus above the commencement of the canal after division of the soft parts.

The method adopted in the case reported by Dr. Mosetig-Moorhof was as follows: The mouth being widely opened, the mucous membrane is divided along the anterior border of the ramus of the jaw, and the finger is directed between the bone and the internal pterygoid muscle to the lingula. The separation of the inferior maxillary from the gustatory nerve is not difficult, since the former passes into the canal and the latter does not. The operation, however, is so far difficult, since the eye cannot be of any assistance, and the operator must trust to his power of touch, and has to work in a very constricted and narrow space; but the result is great relief to the patient, and no disfigurement at all as there is after the before-mentioned methods.

Dr. Mosetig-Moorhof operated on his patient on July 31, and, having found the lingula, divided the internal lateral ligament of the jaw. The nerve and artery were secured by a thread, which was passed round them by means of a small aneurism-needle (it being absolutely necessary to fix them in order to cut through the nerve centrally) and so removed a piece of it. A piece of nerve about four inches long was removed. The reaction which followed a cessation of the neuralgia, and a want of feeling of the right side of the lower jaw, was trifling. Beyond a swelling of the side of the face and pharynx, with some slight difficulty of swallowing, the patient had little to complain of.

The patient was perfectly well by the end of January, and had lost all symptoms of neuralgia.—*London Med. Record*, May 6, 1874.

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Meyer on Articular Neurosis.

Dr. Moritz Meyer, in a paper read before the Medical Society of Berlin, and published in the *Berliner Klinische Wochenschrift* (No. 16, 1874) attributes to Stromeyer and Esmarch the merit of having of late directed particular attention to the obscure and pseudo-inflammatory affections of joints, which were first described nearly half a century ago by Brodie as hysterical articular lesions. These affections, Dr. Meyer states, have their seats in the nerve-trunks which provide the articular capsule and the soft coverings of joints with sensory twigs, and are revealed by pains felt during movements of the affected joints, and are not unfrequently the sole cause of articular immobility lasting for years, and in some subjects to the end of life. This form of neuralgia, for as such the affection may be rightly regarded, sometimes occurs without any appreciable cause; at other times it is undoubtedly a result of some psychical affection or intense emotion. It often follows some mechanical lesion, as contusion or distortion of a joint, and is occasionally dependent on reflex action in cases of gastric disturbance and irritation of the urinary and generative organs. The diagnosis of articular neurosis, and particularly its distinction from inflammatory affections of joints, is often very difficult; but this is an important matter, since rest and antiphlogistic treatment, which are so serviceable in the treatment of the latter affections, are contraindicated in cases of articular neurosis, which require movement of the affected joint, good diet, and tonics. The guiding-points in the diagnosis of the neurotic affection are the following. Nocturnal pains are almost invariably absent in this affection; slight digital contact with the affected joint is generally very painful, whilst firm pressure and concussion of the cellular extremities of the bones do not cause much distress; temporary œdema and puffiness of the integuments are frequently to be met with; the temperature of the affected joint sometimes undergoes periodical variations; notwithstanding absolute rest of the joint, and corresponding limb, the muscles undergo very little wasting; the very slight objective phenomena bear but little relation to the severe pain complained of by the patient; if the attention of the patient be diverted for a time from the affected part, the surgeon may often move the parts about the joints, and the limb, without causing pain. Articular neurosis often ceases suddenly on the appearance of other hysterical affections, through violent mental impressions, after sudden and violent movements caused through accident, and in cases of the reflex variety, after cure of the distant and primary affection. The best treatment, according to Stromeyer, consists in the administration of tonics, cold and sea-water bathing, shampooing, and profuse movement of the affected

joint. Hypodermic injections of morphia, and the administration of chloroform are recommended by Esmarch as excellent means of causing relaxation of stiff joints. Dr. Meyer recommends, in addition to these plans of treatment, a powerful induction-current, applied directly to the painful joint. This, he states, acts readily as an anæsthetic and curative agent. Four cases are reported, in which severe articular neurosis was thus successfully treated.—*London Med. Record*, July 29, 1874.

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Carbolized Gut Ligatures.

Mr. Callender, at a recent meeting of the Pathological Society of London (*Med. Times and Gaz.*, June 27, 1874), exhibited a femoral artery which had been tied with carbolized gut, and a series of gut ligatures which had been subjected to the action of wound secretions. The specimen of artery was the superficial femoral of a woman of fifty, removed twenty days after amputation. The artery was patent at its extremity; no trace of the ligature remained—there was, in fact, only an ordinary fibrinous plug. This result had appeared so alarming that he had considered it necessary to make certain experiments, and the result of these was as follows: 1. A series of catgut ligatures were placed in a wound (after the removal of a fatty tumour) and individually examined at particular intervals. The result showed that catgut ligatures will not last over fifty to sixty hours. 2. A series of catgut ligatures were placed in distilled water at a constant temperature of 99°. After one hundred hours no change was found to have occurred. Mr. Callender, therefore, arrived at these conclusions: (1) that after the application of a catgut ligature to an artery, we must after a time rely upon the clot; (2) that the time we can rely upon the ligature is not more than fifty or sixty hours, or even less if there is strain; and (3) that the changes in the ligature are not due simply to the fluid, but to the nature of the secretions.

Midwifery and Gynæcology.

Premature Rupture of the Bag of Waters.

Dr. Hugenberg (*St. Peterburger Med. Zeitschr.*) observed in his institute 2106 cases of premature rupture of the bag of waters (in 10,482 cases of labour), of which he made careful statistic use. He considers the greatest liability to premature rupture to be when the uterine orifice is not more than three inches in diameter. His conclusions are as follows:—

The too early rupture of the bag occurs on an average in one of every three or four primiparæ; among multipara the proportion is but one in five or six. Especially older primiparæ, with rigid cervix, and multiparæ after the seventh conception, are troubled in this way.

In cases of premature labour, the too early discharge of the liquor amnii occurs seldom in cases of twins, and excessive amount of water frequently. A large fœtus or a narrow pelvis especially predispose; also abnormal presentations in this order, face, podalic, and cross position; the second position also is frequently followed by premature rupture. Labour is, on an average, in premature rupture of the bag of waters, *prolonged by two hours in primiparæ; however, in multiparæ shortened by one and one-half hours.*

Descent of the cord takes place three times as often in early discharge of the amniotic liquor as in the normal condition. The influence on the mother is not harmful, except very slightly on primiparæ (prolonged labour). In cases of multiparæ, however, even very good. The influence on the life of the child is irrelevant.

Supported by statistics, as also a large number of cases where the author practised the rupture with success (even when the uterine orifices was only one and a half inches in diameter), inducing stronger pains and shortening labour, the indication for the operation of artificial rupturing of the bag of waters are as follows:—

1. Especially in multiparæ, when the enlargement of the orifice is retarded by lack of pains.

2. In primiparæ, when with normal pains the cervix dilated too slowly.

3. Where there is a large amount of amniotic liquor, when the lower uterine segment remains broad and flat, and when in abnormal position the fœtus remains movable for a long time. In order to prevent descent of the cord or the extremities, the woman should lie on the side, and the presenting part be brought to the orifice by slight pressure on the fundus. Or one can remove the liquor amnii in suitable quantities by passing a sound, and opening the bag at a higher point.

4. In cases of twins, if by too great dilation of uterus insufficient pains are present, and the dilation is retarded.

5. Death of the fœtus, if expulsion does not soon take place.

The premature rupture is contra-indicated when we find excess of pain and spasms, the vagina is thick and tense, or the uterine orifice is rigid, unyielding, and tense, when the position is abnormal, the pelvis narrow, or the lips of the uterus flaccid and depending, and finally in cases where the cervix is pressed between the child's head and the anterior pelvic wall.—*Detroit Review of Med. and Pharm.*, October, 1874.

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On the Means employed for the Prevention and Treatment of Puerperal Diseases at the Preston Retreat. (Concluded from page 185.)

In the *American Supplement* to the August number of the *Obstetrical Journal of Great Britain and Ireland*, Dr. William Goodell publishes the concluding portion of his paper on this subject as follows:—

In a previous communication I stated the means adopted at the Preston Retreat for the prevention and treatment of puerperal diseases. I now purpose to give my reasons for such of them as need some explanation.

But few words are needed to explain why the ordinary chamber-pots are used, and why patients are made, once or twice a day after the first, to get out of bed and slip into a chair. The presence of putrescent fluids in the utero-vaginal tract is recognized by all writers as the great cause of the autogenetic variety of puerperal disorders. But the recumbent posture of itself necessarily tends to detain these poisonous discharges in contact with the traumatic lesions of labour. These discharges may also be partly imprisoned in the vagina through the swollen condition of the more external soft parts, or partly corked up in the uterine cavity by the presence in the cervical canal of a putrid clot. In such cases detergent vaginal injections are highly recommended. But clinically they will be found of limited value; for they cannot reach high enough, and do not ordinarily dislodge a large clot even when situated low down. True, intra-uterine injections are not open to one of these objections; but, apart from their being attended at best with some degree of hazard to the patient, the operation is too delicate a one to be entrusted to a nurse. Besides, in hospital practice the nozzle of a syringe—to say nothing of the fingers of a nurse—is, I fear, so often one of the vehicles for the transmission of virus, as to make this means of disinfection of doubtful propriety. In a local outbreak of fever, especially of the diphtheritic form, I should, however, sugges the use, immediately after labour, of vaginal injections containing the nitrat of silver or the persulphate of iron, in quantities large enough to sear over the traumatic lesions of labour. Such injections I have had no occasion to try, but they ought to inhibit active absorption and promote healthy granulation.

While seeking a substitute for the syringe, my attention was directed to the fact that the act of sitting on the ordinary chamber-pot often forced out putrid shreds or fetid clots, which had not been washed away by vaginal injections. This led me to discard, except in cases of positive illness, the use of bed-pans,

or of any other utensil—such as urinals—which can be used by a woman when lying on her back. Shortly after making this change, I found that, for like reasons, some shrewd and very practical writers of the last and the present century, urged an early departure from the recumbent posture. Further; a residence of some years in the East had taught me that oriental women, at least, can with impunity get up and be about a few hours after delivery. Influenced by these facts, I decided, cautiously at first, to introduce into the wards of the Retreat a system of puerperal gymnasties, consisting in no restraint whatever as regards the position in bed, and in the daily release from an irksome confinement. I was much pleased to find that the muscular exertion needed for these movements, so far from inducing hemorrhage, excited the womb to contraction, and emptied it and the vagina of their putrid contents. I can testify that whenever the lochia are offensive, these upright positions, repeated several times a day, are excellent deodorants, better in fact than any detergent vaginal injections. There is yet another advantage gained by this plan: it affords, in hospital practice, an excellent opportunity for bundling the bed and bedding out of the ward, and giving them a much needed airing. In a crowded hospital ward the hygienic importance of such repeated disinfection can hardly be overestimated. At the risk of being called an enthusiast, I will go a step further, and hazard the assertion that there is a form of puerperal septicemia not necessarily accompanied by putrid lochia—at least not appreciably so—but indicated by high temperature, rapid pulse, complete anorexia, heavy sweats, and, later, by herpes labialis, which stubbornly resists treatment until the patient is made to get out of bed. This I have seen often enough, after keeping a woman on her back for some pelvic disturbance, to prevent any mistake as to the relation of cause and effect.

Lying-in women are encouraged to get up for good when they feel so disposed, because there are, to my mind, strong objections to the rigorous maintenance of the recumbent posture. Labour is, in general, a strictly physiological process, and there can be no sound reason why it should be made to wear the livery of disease. Nature teaches this very plainly, for most women wish to get up long before their physicians are willing to let them. The fact of a woman's wishing to get up is to me a very good reason why she should get up. In the second place: few physicians will deny that nothing so relaxes the tone of muscular fibre as a close confinement in bed. In my experience a woman ordinarily feels stronger on the fifth day than she does on the ninth, if rigorously kept under quilts and blankets. Once more: the upright position not only excites the womb to contract, but, by distributing the blood and equalizing the circulation, it actually lessens the amount of the lochia and shortens their duration. On the other hand, the dorsal decubitus keeps up a passive congestion of the womb as a whole, the engorgement of the greatly hypertrophied placental site, and a blood-stasis in the now thickened posterior wall—all important factors in hindering the process of involution. Again; uterine diseases are hardly known among those nations whose women early leave their beds. From passages in the writings of the classics, it is evident that among the ancient Greeks and Romans, those models of physical strength and beauty, the women arose and even bathed in a running stream, very shortly after delivery; in some cases on the very day. Finally: what is sounder than all theory, a sufficiently long and well-sifted experience has proved to me that, by such a treatment, convalescence is rendered far more prompt and sure. At this result, very unexpected to the multiparous patients of the Retreat, they are constantly expressing their surprise.

The arguments against the customary purge on the second or the third day are to my mind very sound. I am well satisfied that the "milk fever," for which it was originally introduced into practice, is essentially a myth. Genuine "milk fever" as such is a rare complication, and, when present, of no significance whatever. Unless the nipples are chapped or abraded, the engorgement of the breasts hardly ever leads to abscesses. In proof of this assertion; how rarely does mastitis follow stillbirths! In the vast majority of cases, the occasional constitutional disturbance, the chill-and-fever on the third or fourth day—the so-called "milk-fever"—is owing to a septic cause, and not

to a mammary one. True, the breasts are by this time swollen and painful, but it is a mere coincidence, and coincidence is here mistaken for causation. Purges are, therefore, not only wholly unnecessary, but they disturb the equilibrium, and, what is worse, promote the absorption of septic matter. Partly from increasing the activity of the absorbents, the hemorrhages of labour are very liable to be followed by blood-poisoning. Now, the same result may be logically predicated of a depletion in the shape of a purge. Were my readers to go over their cases of puerperal fever or of other puerperal diseases, I think that they will find some of them dating from the day on which a purge had begun to act. Is it not more than a mere coincidence that these diseases attack a woman usually on the third or fourth day, viz., the day of or following the administration of the customary purge? Three instances of puerperal peritonitis, two of them ending in death, have come to my knowledge, which were referable as plainly as could be to purgation. In one, the lady was slowly but surely mending from the effects of a severe instrumental delivery. For some reason or other she took, in the third week, an ordinary dose of citrate of magnesia. This violently purged her, and at once brought on a fatal attack of fever. In the other two the patients could not have been doing better, until they got a dose of castor oil, which was given for no other reason than that the authors of our text-books were haunted by the bugbear of "milk-fever." Did space permit, I should like to show that this opinion is not shared by myself alone; that cases of phlegmasia dolens have been traced to the effects of a purge, and that the use of aperients during an epidemic of puerperal fever has been strongly condemned.

Quinia is given without stint, because, apart from its well-known tonic and antiperiodic properties, it possesses others which make it, above all remedies, the one best suited for puerperal disorders. By lowering high temperature it retards the oxidation of tissue, and hinders the formation of fibrinous concretions. By shortening the excursions of uterine fibres in their alternate contractions and expansions, it lessens the diastolic engorgement of the womb, diminishes the calibre of uterine bloodvessels, and thereby tends to keep their protective coagula from becoming loose and soluble. By contracting the placental site it proportionally limits that area of absorption. By constringing the coats of the capillaries, and by its inhibitory power over the migration of colourless blood-corpuscles, it either arrests suppurative inflammation or restrains its violence. Finally, it seems to exert a positive curative action on the blood in cases of putrid or purulent absorption. Clinically, I have found nothing comparable to quinia as well as a prophylactic against puerperal disorders, as a remedy for them. But it must be given early, frequently, in large doses, and pushed to a high grade of cinchonism.

Ergot is a very untrustworthy oxytocic. One never can tell beforehand whether it will behave kindly, or run a muck. It is, therefore, no favourite with me. The vectis and the forceps, being under perfect control, are far better oxytocics; their aid is therefore often invoked, in order to save a woman's strength, and to avoid that laxness of uterine fibre following a long and weary labour. Ergot is, however, given as the head is about to emerge, in order to lessen the chances of a flooding or of unruly after-pains, and to aid the process of involution by condensing the uterine globe to its minimum size. For an analogous reason I feel persuaded that Credé's method of placental delivery provokes to a more complete involution. It certainly empties the womb of all clots, and squeezes it down to its smallest capacity.

The prolonged use of the binder is given up for reasons which have been published in this Journal (April, 1874, p. 8). I shall therefore not repeat them. I wish, however, here to state that even its brief use during the first few hours after labour, is not held by me as a cardinal point. I begin to have grave doubts whether it is of any value whatever in the prevention of hemorrhage. On the score of utterly abandoning it I am quite open to conviction.

So much for the reasons on which the foregoing measures are based. Let me now give the results. Up to date there have been 756 cases of delivery,

with six deaths. The following are the order and the numbers of the fatal cases, as copied from the Case Book :—

No. 22. Concealed accidental hemorrhage from the gravid womb.
" 203. Puerperal peritonitis.
" 289. Acute chorea.
" 360. Caries of petrous portion of the temporal bone.
" 398. Chronic pelvic abscess.
" 647. Septic pneumonia.

The case of puerperal peritonitis was an isolated one. The woman had been abandoned by her husband, to whom she was devotedly attached. She fretted and brooded over this desertion in so despairing a manner as to make me apprehensive of mania. Three other patients occupied the same ward with her, but they escaped from contagion.

Cases 22, 289, and 360 were deemed by me so exceptional that their histories were reported to the Obstetrical Society of Philadelphia, and afterwards embodied in its Transactions (*Am. Journal of Obstetrics*, vol. ii. p. 286; vol. iii. p. 140; vol. iv. p. 126). Case 398 was that of an old pelvic abscess following a previous labour, viz., an abortion produced by the kick of a drunken husband. During the last week of utero-gestation this abscess began to inflame and to cause her so much suffering that very large doses of morphia were needed to control it. Labour very greatly intensified this distress. When the womb was emptied a tumour was found in left broad ligament, and all the symptoms of localized peritonitis were present. Under appropriate treatment she soon began to mend; but on the fourteenth day she was suddenly seized with violent abdominal pain and fell into a collapse, from which she never rallied. An autopsy, made by my friend the editor of this Journal, revealed an old pelvic abscess, which had burst into the cavity of the abdomen. This case, it seems to me, cannot fairly be attributed to a septic cause, but to the antepartum recrudescence of an old lesion. Case 647 is one of doubt in my mind. There were no appreciable pelvic or abdominal lesions; and yet, in default of an autopsy, which was not permitted by her friends, I think it fairer to attribute the pneumonia to blood-poisoning rather than to a non-septic cause.

To sum up, then: out of 756 cases of labour there have been

2 deaths from septic causes.
1 death from the bursting of an old abscess.
1 death from hemorrhage.
2 deaths from non-puerperal diseases.

Apart from the above record the Case-Book exhibits no case of phlegmasia dolens, and none of pelvic abscess. One woman, however, had, I am told, a pelvic abscess at home. Through fright at an outbreak of measles in the building, she insisted on rising from her bed and on being discharged on a wet winter night. Although a large proportion of the inmates were primiparæ, and two of them confirmed epileptics, but two cases of eclampsia took place, and these in women who had not been subjected to any prophylactic treatment. The one, while labouring under violent convulsive attacks, was brought in a hack by her friends. The other was seized the day after admission. Both recovered under repeated rectal injections of drachm doses of the hydrate of chloral, and a final delivery under ether with the forceps.

Since nothing is so fallacious as statistics, even when based on large averages, it is with much diffidence that I offer the above meagre data. They may not sustain my views; but they will, I hope, show that lying-in women can be gainfully treated in a manner less artificial than is customary, and more in accordance with the maxim *naturâ duce*.

One word more: For many reasons the statistics of a lying-in hospital can never compete with those of private practice. Of these I shall adduce but two. In the first place, the former are more trustworthy, for physicians very naturally shrink from reporting their fatal midwifery cases as such. I have known a death from post-partum hemorrhage returned as one from "anæmia," and another from puerperal albuminuria as a case of "pneumonia"—œdema of the lungs being present; whilst fatal cases of puerperal septicæmia are con-

stantly being certified to under the heading of some prominent symptom which tells no tale, such as "peritonitis," "pleuritis," or "pneumonia." For instance, during a period of eight weeks of this year I was asked to see eight cases of puerperal fever—four of them from one Sunday to another. Of these all but one proved fatal. During the same time I casually became cognizant of seven other fatal cases. Now, during these eight weeks I studied with much interest the weekly returns of the Board of Health, and found there reported just twelve deaths from "puerperal fever." There were, however, also reported, eleven deaths from "inflammation of the peritoneum," one death from "child-bed," and one each from "septicæmia" and "pyæmia." Comment on the above is unnecessary; the figures speak for themselves.

In the second place, physicians naturally shirk the worry and anxiety, the delay and trouble incident to difficult labours in their private practice, especially when such occur in a class from which they can expect no adequate remuneration. A hospital thus becomes the Cave of Adullam for all these abandoned cases. For instance; out of the six fatal cases which I have reported from the Case-Book of the Retreat, the one of chorea and that of hemorrhage were sent to the institution by the family physician—the former on account of her being unmanageable at home; the latter because her labours were growing more and more difficult from an exostosis. The two epileptics[1] adverted to, two distressing cases of phthisis and valvular disease of the heart, and many of difficult labour in multiparæ come under the same category. There are at present in the building two women not yet delivered, who were sent there by their respective medical attendants. The one is an epileptic primipara; the other a secundipara with a vesico-vaginal fistula, the result of craniotomy in her previous delivery. It is thus that the death-rates of lying-in hospitals show to disadvantage beside those of private practice.

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On Puerperal Tetanus.

M. Blachez reports (*Gazette Hebdomadaire de Médecine et de Chirurgie*) a case of true tetanus, not one of those forms of muscular contractions occurring in the newly confined or nursing mothers, which was described by M. Delpech (1846) under the name of idiopathic muscular spasms, or which Trousseau called *tétanie*, or which Dance long previously (1831) named intermittent tetanus (*tétanos intermittent*). The patient was a woman forty-three years old, mother of ten children. During the last year, she had been subject to hysterics. She was confined of a puny eight months' child twelve days before her admission into the hospital. She got up, as was usual with her, on the fourth day. On the ninth day after her confinement, she felt difficulty in swallowing, and stiffness of the jaws. The dysphagia, trismus, and opisthotonos gradually increased in severity, until death took place on the fifth day after her admission into the hospital, and the thirteenth day after delivery. On admission, the temperature and urine were normal, the lochia were natural, and the breasts contained but little milk. The temperature gradually rose to 44.2° Cent. (111.5° Fahr.), and the pulse to 136. The temperature was not taken at the time of death. The treatment consisted of chloral, cupping, and the application of chloroform in spray along the spinal column. The necropsy, apart from congestion of the two lungs, especially the right, and a marked injection of the vessels at the base of the brain, exhibited no lesion. Careful microscopic examination showed nothing.

Although there is some analogy between the two affections, hysteric convulsions (*tétanie*) and tetanic convulsions (*tétanos*), and a resemblance as if of the same morbid species, still there is a sufficiently marked difference in their etiology, progress, and prognosis. "Tétanie" is almost invariably a benign disease, and very rarely mortal; not so "tétanos;" the latter has never been observed except in close connection with parturition, whereas the former has

[1] I am not aware that epilepsy predisposes to puerperal eclampsia—at least I have not found it to do so. But many physicians look upon it as a dangerous complication in labour.

been observed during gestation or after many months of suckling. Trousseau states that young women are peculiarly liable to *tétanie;* not to tetanus (*tétanos*). Hysteric convulsion (*tétanie*) has a partiality for the extremities; the attacks are separated by a period of calm and health, the muscles of the jaw and chest are seldom invaded, and the temperature is normal. Tetanus generally occurs after some accident during labour, and is developed under the same unfavourable agencies that lead to the ordinary puerperal affections. The uterine wound plays a very important part in this disease, not so in the other. Simpson's hypothesis that hysteric convulsions are the result of some poison developed in the blood, is negatived by the fact that they generally occur under the most favourable hygienic conditions. Hemorrhage, obstetrical operations, moral impressions, and, above all, chills, play a very important part in the production of tetanus, but the precise influence of each has never yet been made out. They are the chief agents in the etiology of all puerperal affections, not in tetanus in particular. In this patient there was an exalted nervous condition, as was shown by the hysterical attacks. Puerperal tetanus is as obscure as surgical. Deduct the puerperal condition, and they are the same; simple traumatic tetanus, consequent on injury.—*London Medical Record*, Sept. 2, 1874.

On Tincture of Eucalyptus Globulus in Puerperal Affections.

At a meeting of the Dresden Medical Society (*Berliner Klinische Wochenschrift*, July 28) Dr. Osterloh reported that he had given tincture of eucalyptus in thirty-one cases. The preparation was obtained from off a tree in the Botanical Gardens in Dresden. Where there was febrile disturbance without any apparent anatomical cause the drug acted beneficially, but in cases of primary acute inflammatory fever the results were nil. In the course of the debate, it was stated that the preparations sold by the druggists varied considerably in their effects.—*London Medical Record*, Sept. 23, 1874.

On Luxation of the Right Sacro-Iliac Synchondrosis.

Dr. Bille exhibited before the Dresden Medical Society on July 5, 1873 (*Berliner Klinische Wochenschrift*, July 13, 1874), the pelvis of a young woman, aged twenty-two, in which this accident had happened. She was stated to have been seventy-nine hours in labour, and as far as could be gathered, she was delivered by the forceps. She had endocolpitis and endometritis during the puerperal stage; but on the tenth day she felt well enough to return to her home. Shortly after her return she began to experience intense pain over the right iliac joint, which compelled her to re-enter the hospital. On admission, all the organs were found healthy with the exception of the uterus, which was subinvoluted and very sensitive. Any movement of the right thigh caused crepitation to be heard and felt over the hip-joint. Abscesses formed, opening into the hip-joint and above Poupart's ligament. In the seventh week, she sank from the exhausting drain of pus. The necropsy showed several fistulous tracts leading from Poupart's ligament to the sacro-iliac joint, also infiltration of pus into the sheaths of the deep muscles of the thigh, with separation of the periosteum from the neck of the femur.

The articular surfaces of the right sacro-iliac synchondrosis were roughened and carious, the bones being separated about two lines from each other. The surrounding soft joints were infiltrated and discoloured. The other parts of the pelvis were all healthy. Dr. Bille was induced to believe that the pelvis was quite normal, but the child was disproportionate; but he did not suppose that it (the child) need have separated the joint, and so set up inflammation. It was probably a distinct affection coming on incidentally afterwards. Dr. Krüger combated this view, maintaining that it arose most likely through the fœtus being left too long in the second stage, which set up mischief in the joint. This view was not accepted by the Society.—*London Medical Record*, Sept. 23, 1874.

On a Case of Adherent Ovarian Cyst, cured by Injection of a Solution of Carbolic Acid.

Dr. Edward Martin reports (*Berliner Klinische Wochenschrift*, June 15, 1874) the case of a young woman, aged twenty-five, of delicate constitution. The ovarian tumour was ascertained to spring from the left side, and to be attached to the uterus. The uterine sound passed nearly three inches forwards, and to the right. Any movement of the tumour affected the uterus. At the urgent request of the patient, she was operated upon. An incision about four inches long was made in the linea alba. The tumour was then found to be so firmly adherent to the abdominal walls, that any attempt at its removal would have been fraught with great danger. An opening a little more than an inch long was made into the cyst, and about a quart of a brownish glairy fluid, mixed with small blood-clots, was let out. An examination of the cyst showed it to be fixed to the abdominal walls, and to the uterus to a large extent. Two strong elastic catheters were fixed in the cyst, and the wound closed by metallic sutures. The next day, a solution of carbolic acid in water (0.25 per cent.) was injected into the cyst, and continued until what ran out of the other catheter was quite clear and free from any odour. That which first came away was turbid. This was repeated three times a day. The solution on the next day contained 2½ per cent. of carbolic acid, which was afterwards increased to 10 per cent. The temperature never exceeded 101.5 Fah., and the pulse 120. The tumour gradually became less and less, and on the thirteenth day it was about the size of an apple, and the discharge was free from any odour. The injections were then reduced to twice a day. On the twenty-fourth day the catheters were removed. The small fistulous opening soon closed; and when last seen, five months afterwards, she was completely restored to health and strength.

The only point of interest was the uninterrupted convalescence; which was attributed to the frequent washing out of the cyst with the carbolic acid lotion. At no time did the urine show any trace of carbolic acid, although a strength of 10 per cent. was for some days injected. The remains of the former tumour were still evident behind the cicatrix when last examined, but nothing was discoverable *per vaginam*.—*London Med. Record*, Aug. 19, 1874.

Medical Jurisprudence and Toxicology.

On Poisoning by Osmic Acid.

All inquiries into the toxicological action of the rarer metals have a peculiar interest. The deleterious action of osmic acid has been known for a long time. M. Frémy was the first to call attention to the poisonous nature of the osmium compounds. M. Sainte-Claire Deville was himself seized with persistent nervous asthma in working with the acid. M. Debray suffered from some affection of the eyes caused by it; and lastly, M. Julien Clément found that it induced a cutaneous disease which was very difficult to cure.

The paper before us, by M. Raymond, in *Le Progrès Médical* of June 27th, 1874, gives a history of a case of supposed poisoning by osmic acid. A man aged thirty, being out of his usual employment (a band-box maker) engaged himself to work in the laboratory of M. Sante-Claire Deville. Here he was occupied in the daily handling of pieces of osmium, platinum, and iridium. In the process to which they were subjected, an osmiate of baryta was produced; this was treated with nitric acid, and the osmium precipitated with sulphide of ammonium. The man up to the time of beginning this work was perfectly healthy, and it is important to notice there was no history whatever of syphilis. After commencing this new employment he was very soon taken ill, the first symptom of which he complained being pains in the eyes. He slept heavily at

night, and was much troubled with nightmares. After a few days, an extensive eruption appeared on the surface of the forearm, on the face, and on both sides of the hands. Extreme indigestion, frequent diarrhœa, nine or ten times daily, and at each stool the passing a considerable quantity of black blood (the patient having no signs of piles) were prominent symptoms as the case progressed. Violent headaches, nausea without vomiting, shiverings, extreme dyspnœa, and a harassing cough rapidly followed. On admission at the hospital, the one prominent symptom was the extreme difficulty in breathing, amounting almost to threatening asphyxia. The temperature was 104° Fahr. On examination, the chest revealed the existence of a general bronchitis, and on the left side there was a somewhat extensive pneumonia. The skin of the hands and forearm was sprinkled with a papular eruption of a red and brownish colour, whilst the urine showed the existence of a large amount of albumen.

The case gradually became worse, and eight days after admission the man died. The temperature during the time he was in the hospital remained at 104° Fahr.; the pneumonia gradually increased in severity and extent; no diminution in the quantity of the albumen was apparent under treatment; and the weakness gradually became extreme.

At the *post-mortem* examination the lungs showed a very manifest change, there being in both evidence of extensive pneumonia. In one lung there was "a gangrenous cavern" in course of formation. On examination with the microscope, pus-globules were discovered in the pulmonary cells of both lungs. The kidneys showed the pathological appearances indicating extensive and acute Bright's disease. In the stomach there was a considerable amount of inflammatory action along the greater curvature. The other organs were healthy. On chemical examination, however, of the several viscera by M. Personne, no trace of the poison, the supposed cause of the illness and death, was discovered.

M. Raymond believes that it was an undoubted case of poisoning (chronic) by an action of an osmium compound; and he further promises to lay before the Société de Biologie, at which the original paper was read, the result of further experiments with osmium and its salts. We look forward with some interest to them.—*Lond. Med. Record*, Sept. 30, 1874.

Hygiene.

Quarantine in Relation to Cholera.

The International Sanitary Conference which convened at Vienna, on July 1st, for the purpose of considering the question of quarantine in relation to cholera, numbered among its members many of the most distinguished European authorities upon cholera. The Conference terminated its work on the 1st of August, after twenty sittings. The following are the conclusions which were arrived at, and for which we are indebted to the *Practitioner*, for September. The conclusions which were unanimously adopted are indicated by the capital letter *U*, and where unanimity was not arrived at, the distribution of the votes is given.

A.—Scientific Questions.—I. *Origin and genesis of Cholera; endemicity and epidemicity of this disease in India.* Asiatic cholera, susceptible of spreading (epidemically), is spontaneously developed in India, and when it breaks out in other countries, it has always been introduced from without. (*U.*) It is not endemic in any other country but India. (*U.*)

II. *Questions of Transmissibility.* 1. *Transmissibility by Man.* Cholera is transmissible by man coming from an infected medium; but man is not considered as the specific cause, apart from the influence of locality; he is regarded as the propagator of cholera when he comes from a place where the germ of the disease already exists. (*U.*)

2. *Transmissibility by Personal Effects* (*clothing, linen, bedding, etc.*). Cholera can be transmitted by personal effects coming from an infected place, especially such as have served for the sick from cholera; and certain facts show that the disease can be carried to a distance by these effects if shut up so as to prevent free contact with the air. (*U.*)

3. *Transmissibility by Foods and Drinks.* (*a.*) *Foods.* The conference, not having conclusive proofs of the transmission of cholera by foods, decided by eleven States against seven that it was not justified in coming to a decision on this question.

(*b.*) *Drinks.* Cholera can be propagated by drinks, particularly by water.

4. *Transmissibility by Animals.* No proof exists of the transmissibility of cholera by animals, but it is reasonable to admit the possibility of such transmission. (Yes, 10; No, 2; abstaining, 6.)

5. *Transmissibility by Merchandise.* Although proof is wanting of the transmission of cholera by merchandise, the possibility of such transmission in certain conditions should be admitted. (Yes, 13; abstaining, 5.)

6. *Transmissibility by Cholera-corpses.* Although it is not proved that cholera-corpses can transmit cholera, it is prudent to consider them dangerous. (*U.*)

7. *Transmissibility by the Atmosphere alone.* No fact is yet known which proves that cholera can be propagated to a distance by the atmosphere alone, whatever its condition. Moreover, it is a law, without exception, that an epidemic of cholera is not propagated from one place to another in a shorter space of time than it takes man to travel.

The surrounding air is the principal vehicle of the generative agent of cholera: but the transmission of the malady by the atmosphere, in the immense majority of cases, is restricted to the close vicinity of the focus of emission. As to facts asserted of transportation to a distance of one or many miles, they are not conclusive. (*U.*)

8. *Action of the Air upon the Transmissibility.* It results from a study of the facts that in free air the generative principle of cholera rapidly loses its morbific activity; but that in certain conditions of confinement this activity may be preserved during an undetermined time. Great deserts form a very efficacious barrier against the propagation of cholera. This disease has never been imported into Egypt or Syria, across the desert, by caravans from Mecca. (*U.*)

III. *Duration of Incubation.* In almost every case the period of incubation—that is to say, the time which elapses from the moment when an individual has contracted the choleraic intoxication to the commencement of the premonitory diarrhœa or of confirmed cholera—does not exceed a few days. All the facts cited of a more prolonged period of incubation refer to cases which either are not conclusive, or in which the premonitory diarrhœa has been included in the period of incubation, or in which contamination (the contraction of the choleraic intoxication) has occurred after departure from the infected place.

Observation shows that the duration of the choleraic diarrhœa called premonitory—which must not be confounded with other kinds of diarrhœa that may exist where cholera prevails—does not exceed a few days.

The facts instanced as exceptional do not prove that cases of diarrhœa of lengthened duration belong to cholera and are susceptible of transmitting the malady, when the person affected is removed from all cause of (choleraic) contamination. (Yes, 13; No, 1; abstaining, 4.)

IV. *Questions as to Disinfection.* Are any means or processes of disinfection known by which the generative or contagious principle of cholera can be *certainly* destroyed or deprived of its intensity? (No, 12; abstaining, 7.)

Are any means or processes of disinfection known by which the generative or contagious principle of cholera can *with some chance of success* be destroyed or deprived of its intensity? (Yes, 13; No, 5.)

Science does not yet know any certain and specific measures of disinfection; but the great value of hygienic measures, such as ventilation, thorough

cleansing, etc., is to be recognized, combined with the use of the substances regarded as disinfectants. (*U.*)

B.—Questions as to Quarantine.—I. *Land Quarantine.* Holding that land quarantines are impracticable and useless, on account of the numerous and daily increasing means of communication; holding, also, that they compromise seriously commercial interests, the conference rejects them. (Yes, 13, Germany, Austria, Hungary, Belgium, Denmark, Great Britain, Italy, Norway, Netherlands, Persia, Roumania, Russia, Sweden; No, 4, France, Greece, Portugal, Servia; abstaining, 2, Luxembourg, Switzerland.)

II. *Maritime Quarantines.* 1. *Measures to be taken out of Europe.* With the object of preventing further invasions of cholera in Europe, the conference approves the measures recommended by the Constantinople Conference (1866), particularly the measures of quarantine suggested in the Red Sea and the Caspian Sea. The organization of these measures should be of the most complete description, and such as to satisfy the most rigorous principles of hygiene.

2. *Measures to be taken in European Ports.* When cholera has invaded Europe, the conference recommends the subjoined system of medical inspection; but in the case of States which prefer to maintain quarantine, it submits the principles upon which it should be regulated:—

(*a.*) *System of Medical Inspection.*—(1.) There should be established in each port open to commerce a sanitary authority formed of physicians and local representatives, aided by a proper staff. The number of members in each of these different categories will vary according to the importance of the port; but the number should be sufficient to permit of the measures exacted with regard to ships, crews, and passengers being carried out rapidly under all circumstances. The principal officer of the sanitary authority will always be kept informed through official sources of the sanitary state of all ports infected with cholera.

(2.) Ships arriving from clean (healthy) ports, and which, according to the oath of the captain, have not touched in the course of their voyage at an intermediate suspected port, or communicated directly with a suspected ship, and in which during the voyage, no actual or suspected case of cholera has occurred, will be admitted to free pratique.

(3.) Ships arriving from a suspected or infected port, and those coming from unsuspected ports, but which, during the voyage, have had intermediate compromising relations, or on which suspected cases of, or deaths from, cholera may have occurred, will be submitted, on arrival, to a rigorous medical examination, in order to determine the sanitary state of the crew and passengers.

(4.) If it results from the medical examination that no case of sickness or the corpse of any person dead from cholera exists on board, the ship, with al it contains, will be admitted to free pratique; unless cases of cholera, or of a suspicious nature, have occurred during the voyage, when the ship, the clothing, and the luggage of the crew and passengers will be submitted first to a thorough disinfection, although both crew and passengers be then free from cholera.

(5.) If any suspected case of cholera, or death from cholera, be found on board, the sick will be at once removed to a lazaret or to an isolated place provided for the purpose, and the dead will be cast into the sea with customary precautions, or will be buried after fitting disinfection; the passengers and crew will be thoroughly disinfected, and the ship itself will also be disinfected after the removal of the passengers and such portions of the crew as may not be necessary for the disinfection and charge of the vessel. The clothing and luggage of the sick, and also the healthy passengers, will be subjected, in special premises and under rigorous control of the sanitary authority, to a thorough disinfection. After this disinfection, the property of the passengers and crew will be restored to them, and they will be admitted to free pratique.

(6.) The merchandise landed will be admitted to free pratique, with the exception of rags and other susceptible objects, which will be submitted to thorough disinfection.

(*b.*) *System of Quarantines. Arrivals from Infected Ports.*—(1.) Arriv

from infected ports should be submitted to from one to seven full days' observation, according to circumstances.

(2.) *Suspected Ships.* If the sanitary authority is satisfied that no case of cholera or of a suspicious nature has occurred on board during the voyage, the duration of observation should be from three to seven days, dating from the time of the medical inspection. If, however, the voyage has lasted at least seven days, the time of observation may be reduced to twenty-four hours, for the examination and disinfection which may be judged necessary. In cases of this category the quarantine of observation may be completed on board if no case of cholera or any suspicious sickness has occurred, and the hygienic condition of the ship be good. In such cases unlading of the ship is not necessary.

(3.) *Infected Ships.* If any case of cholera or of suspicious sickness has occurred during the voyage, or after the arrival, the duration of observation for the healthy should be seven full days, dating from their isolation in a lazaret or other place provided for them. The sick should be landed and subjected to proper treatment, in an isolated locality set apart for them, and separated also from the place where the healthy undergo observation. The ship and all objects in it susceptible of retaining infection are to be submitted to a thorough disinfection, after which the persons remaining on board the ship will be subjected to seven days' observation.

(4.) *Arrivals from Suspected Ports.* Arrivals from suspected ports—that is to say, from ports adjoining and having free communication with a port where cholera exists—should be submitted to observation not exceeding five days in duration, if no suspicious sickness has happened on board.

(5.) *Various Regulations.* Ships carrying emigrants and pilgrims, and generally all ships considered peculiarly dangerous to the public health, may, under the conditions previously noted, be subjected to special precautions, to be determined by the sanitary authority of the port of arrival.

(6.) When the local resources do not permit of the measures herein prescribed being carried out, the infected ship should be sent to the nearest lazaret, after having received such aid as she may need.

(7.) A ship arriving from an infected port, which has put into an intermediate port, and received there free pratique without having performed quarantine, is to be considered and treated as arriving from an infected port.

(8.) In cases of simple suspicion, measures of disinfection are not strictly requisite, but they may be carried out if the sanitary authority thinks fit.

(9.) A port in which cholera prevails epidemically should not carry out quarantine properly so called, but should solely have recourse to measures of disinfection.

(c.) *Regulations common to the Two Systems. Medical Inspection and Quarantines.* (1.) The captain, the medical officer, and the officers generally should be required to declare to the sanitary authority all that they know with regard to suspicious sickness among the crew and passengers, subject to penalty in the event of a false declaration or of deliberate concealment. It is to be desired that an international agreement should be come to on this subject.

(2.) The disinfection either of luggage or of ships will be effected in such manner as the competent authorities of each country may determine.

(Yes, 21 ; abstaining, 1—Spain.)

The conference expressed a wish that a penal law applicable to sanitary contraventions should be enforced in the Ottoman Empire, by 15 affirmative votes to 4 negative, 3 States abstaining.

III. *River Quarantines.* All the arguments advanced to prove that land quarantines are impracticable and useless in preventing the propagation of cholera, apply equally to river quarantines.

The measures recommended in the system of medical inspection by the conference can be adopted for ships in rivers, having cholera on board.

Ports at the mouths of rivers come within the category of maritime ports and the measures recommended for these ports consequently apply to them (Yes, 19 ; abstaining, 3—Servia, Turkey, Egypt.)

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